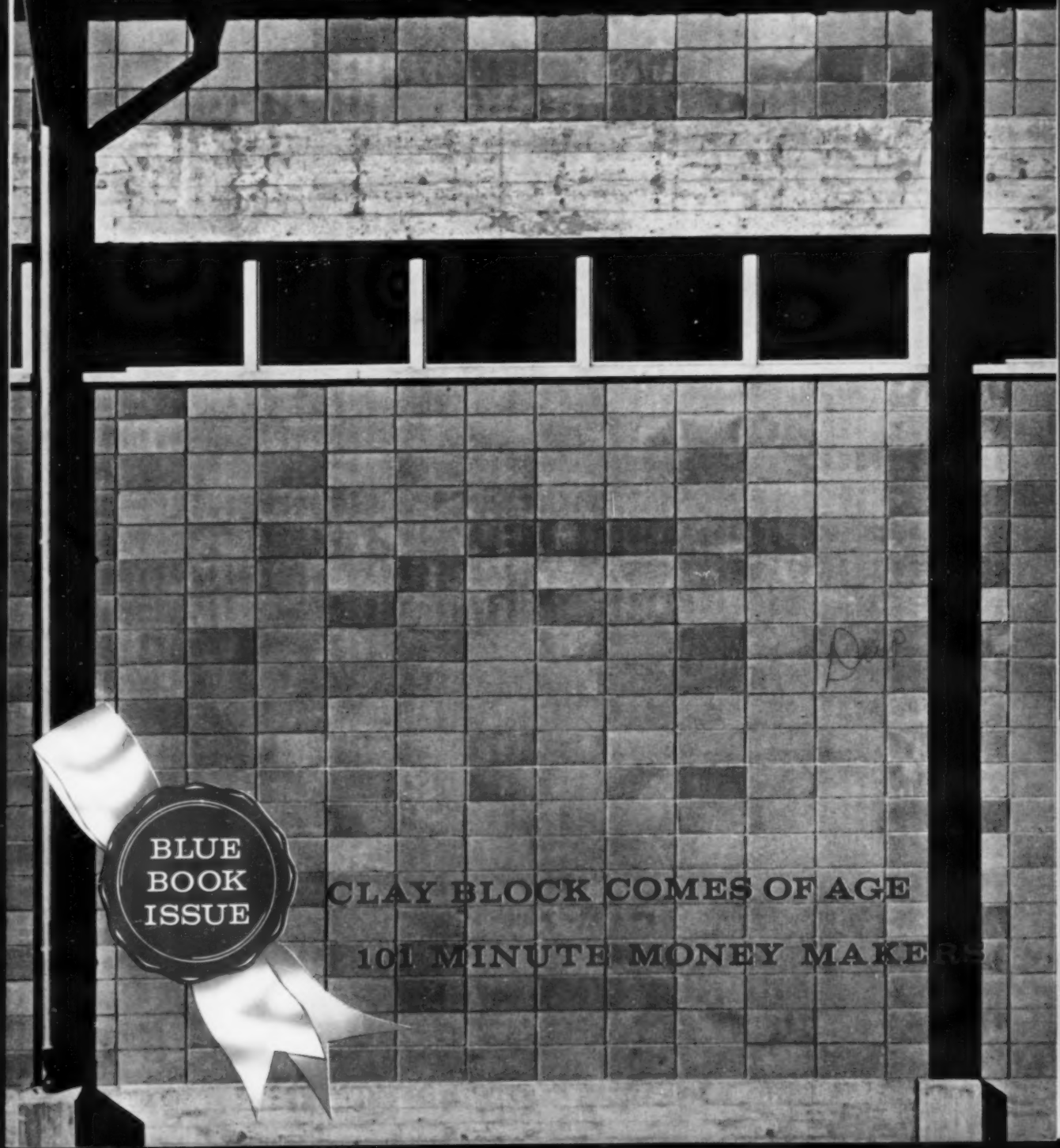
A CAHNERS PUBLICATION

APRIL, 1961/75c

Brick & Clay RECORD



BLUE BOOK ISSUE

CLAY BLOCK COMES OF AGE

101 MINUTE MONEY MAKERS

TO SERVE YOU *EXPANDED FACILITIES, SERVICES, SKILLS and LINE OF PRODUCTS*

Add to Bonnot's more than 75 years of experience in developing and producing clay processing machinery, all the integrated facilities of The C. L. Gougler Machine Co., of Kent, Ohio, of which the Bonnot Division now is a subsidiary.

This combination of manufacturing know-how, design and research, and technical manpower provides a "complete service team" unmatched in the clay industry. From nose cones for defense, to automobile components and a wide variety of "contract products," the Gougler companies* serve the "who's who in American industry."

Bonnot operations will continue in Canton— with expanded facilities and strengthened service geared to YOUR plant, products and production problems.

ENGINEERING . . .

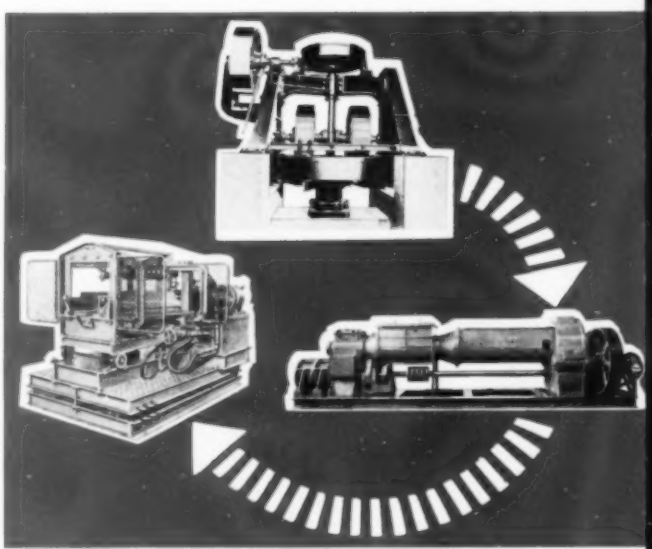
begins with positive analysis of your local conditions and needs by experienced Bonnot engineers. Their industry background now is augmented by broad new skills and added manpower. Thus, your manufacturing problems get the integrated thinking of Bonnot and Gougler technicians to insure equipment that "delivers" highest quality . . . greatest cost control . . . minimum maintenance.

MANUFACTURING . . .

specifications and schedules assure dependable delivery of machines ruggedly built for years of uninterrupted production. Bonnot equipment is also designed for simplification of maintenance through interchangeable components. Quality wearing parts are produced in Bonnot's own foundry, now expanded to include a larger parts inventory for 24 hour shipments. When an emergency arises, you get the services of clay processing specialists, plus the facilities of America's largest contract machine shop.

RESEARCH . . .

in our expanded laboratory (with a "new look" of doubled floor space, additional equipment and more personnel) indicates still more important "clay industry firsts." Bonnot pioneering already includes production de-airing, frictionless bearings, front end absorption of thrust loads, offcenter disc feeders, completely adjustable hydraulic cutters. These and other cost-saving advancements enable you to maintain delivery schedules and reasonable profit returns.



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- C. L. GOUGLER MACHINE COMPANY
- GOUGLER KEYLESS LOCK COMPANY
- KENT AIR TOOL COMPANY
- BONNOT DIVISION

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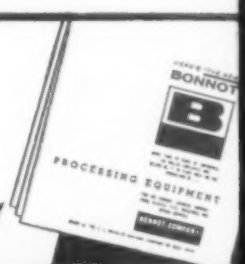

The BONNOT Co.

CANTON 2, OHIO

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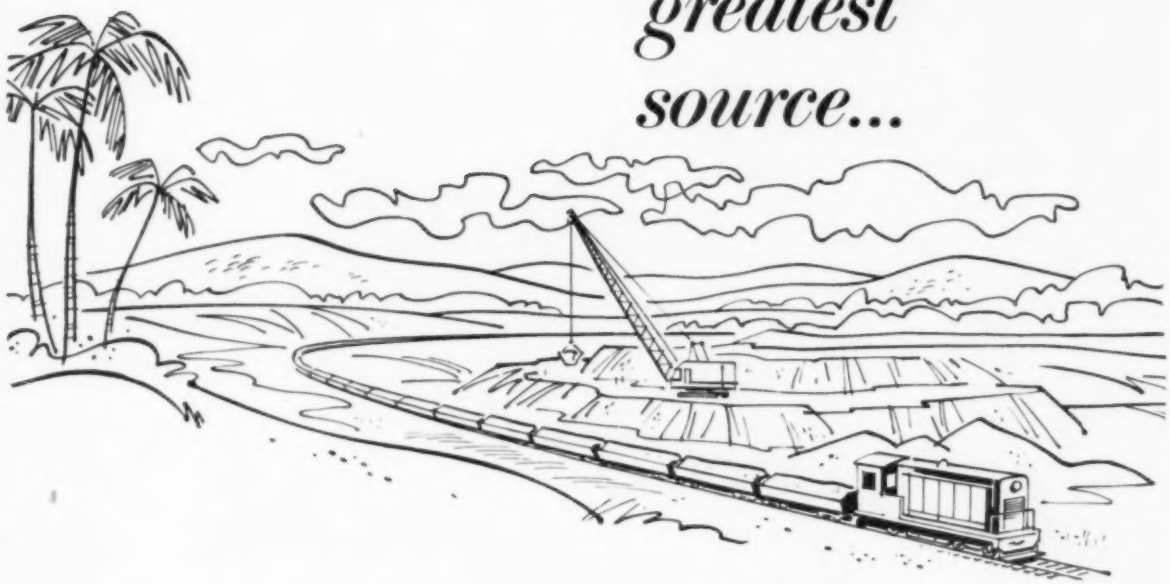
DIVISION OF THE C. L. GOUGLER MACHINE COMPANY OF KENT, OHIO

World's greatest source...



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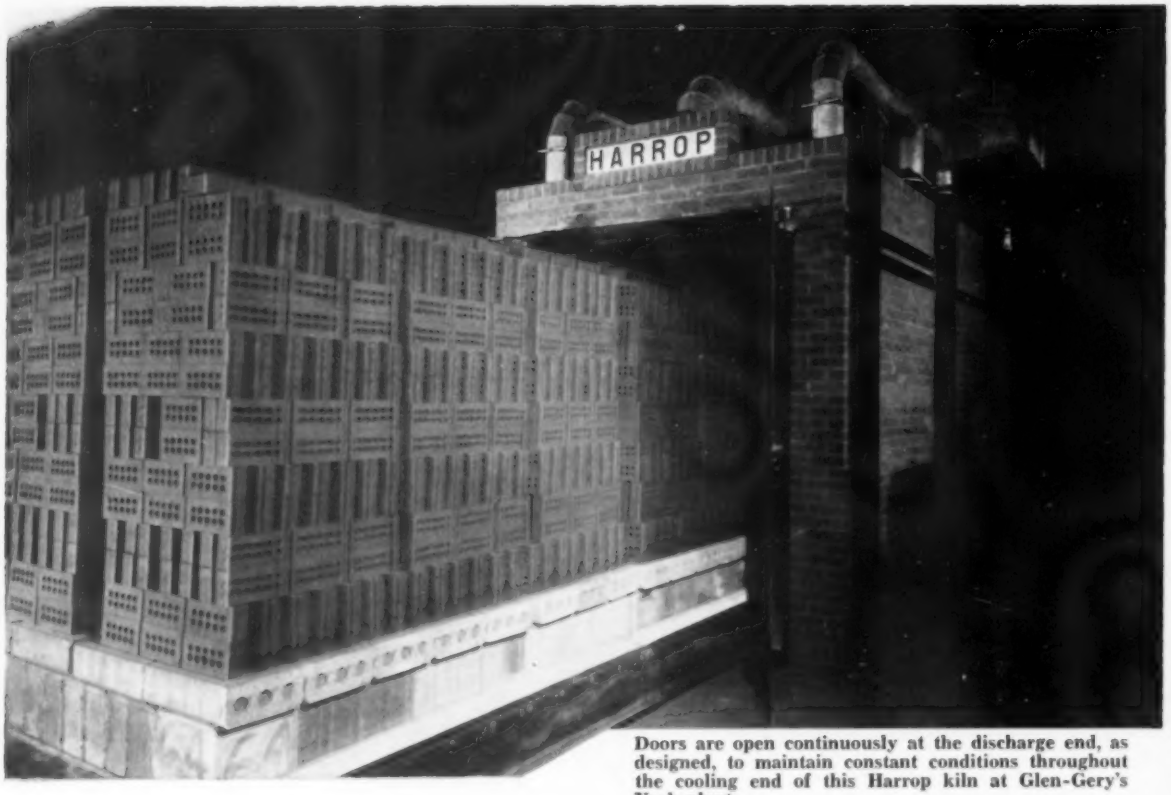

Doors are open continuously at the discharge end, as designed, to maintain constant conditions throughout the cooling end of this Harrop kiln at Glen-Gery's York plant.

"We really got a fourth Harrop kiln free"

Design proposals called for a daily output of 109,000 face brick from three Harrop kilns at the Harrisburg, Watsontown and York Colonial plants of Glen-Gery Shale Brick Corporation, Shillington, Pa.

But current daily production from these three kilns runs 140,800 brick.

"That's why we say the 31,800 *extra* brick from our three Harrop kilns really means we got a fourth kiln free," says Gordon E. Lewis, Glen-Gery's Chief Engineer. "And we're maintaining this high production rate with a better than 95% recovery of first-quality brick."

Bonus production and consistent high quality — many a user of a Harrop kiln reports this kind of extra performance. It's the profitable "plus" you can look for when Harrop principals put their more-than-a-century of ceramic engineering experience to work for you.

This result-producing experience is yours for the asking . . . write, wire or phone to arrange a non-obligating consultation on your dryer, kiln or plant design needs.

(above) Air lock and drop door at the charging end are electrically interlocked with the pusher to maintain constant conditions as cars enter the kiln.

(below) Completely automatic draft control of the kiln's main exhaust is provided by this draft instrument and the damper it actuates.

HARROP

Western Representative: Fred J. Ford, Room 413, 35 E. Gay St., Columbus 15, Ohio

Southwestern Representative: Process Engineering Service, 6936 San Pedro Ave., San Antonio, Texas

Harrop Precision Furnace Co. (division of Harrop Ceramic Service Co.) 3470 E. Fifth Ave., Columbus 19, Ohio . . . laboratory, industrial and school furnaces

Harrop Ceramic Service Co.

35 EAST GAY ST., COLUMBUS 15, OHIO

Circle Service No. 7

The magazine of brick, drain tile, structural tile, clay aggregate, terra cotta, roofing tile, refractories, clay pipe, and abrasives.

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Editor and Publisher

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CONTRACTS: Formal acceptance made only in Chicago.

Business

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THIS MONTH'S COVER

Along with presenting the 5-page report on the recent Clay Block Conference which was sponsored by Brick & Clay Record, the editors thought it would be appropriate to show the readers how the clay block will be used in the wall. The building illustrated on the cover demonstrates a potential use for a clay-bonded unit. The block themselves were made on the Locatelli press, the Italian machine which was described in one of the papers presented at the Clay Block Conference. This is Brick & Clay Record's Blue Book Issue, a reference book of suppliers to the industry. Be sure to read their messages in this issue.

A CAHNERS PUBLICATION

Brick & Clay RECORD

Contents for April, 1961 • Vol. 138, No. 4

69 See You in Toronto!
Here are pictures of some of the suppliers' representatives who will be at Toronto April 23 to 27 for the ACS convention. They are anxious to meet you, greet you and tell you about the latest in materials and equipment to make your production more effective. Be sure to look for them.

71 An Open Letter to the Industry
Regretfully, special circumstances made it impossible for Brick & Clay Record, in cooperation with companion publication *Ceramic Industry*, to present an exhibit at this year's convention. Those of you who remember last year's highly successful exhibit at Philadelphia will concur in our regrets. Our letter explains the circumstances.

73 Demand Grows for Lightweight Aggregate
Production of lightweight aggregate is up 13% from last year, it was announced at the convention of the Expanded Clay and Shale Association. Production increases tie in with increasing demand for the product in lightweight clay block and concrete. Here is something for which new uses are continually being uncovered.

75 Clay Block Comes of Age
More than 215 industry members attended the Second Clay Block Conference sponsored by Brick & Clay Record. The meeting was informal and encouraged an exchange of ideas. Among the subjects covered were types of aggregate for making clay block, forming clay block, firing clay block, glazing clay block. A panel of architects also appeared, gave their approval of the block and asked that the industry start producing it.

80 101 Minute Money Makers
One hundred-one (count 'em) minute money makers, short, snappy items designed to aid you in every phase of your operation. Here are hints on all phases of production gathered from all kinds of plants in all parts of the country. You are almost certain to find some of the answers you have been looking for.

Departments

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Leading Clay Journal of The World
Established 1892; Now in 69th Year

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Better REDS for Brick by Ferro

Low-temperature reds, long a problem in brickmaking, can be handled much like other colors with these red stains developed by Ferro. ■ Providing a wide range of clean, attractive reds, they can be easily combined with compatible yellow and orange oxides for fresh new "off red" shades. ■ Like other Ferro inorganic colors, these reds are "customized" to your specific needs, your equipment and quality controls. Complete mill formulas are supplied you. Just tell us about your equipment, firing ranges, type of clay and the particular colors in which you are interested. We'll take it from there. Why not write us today?

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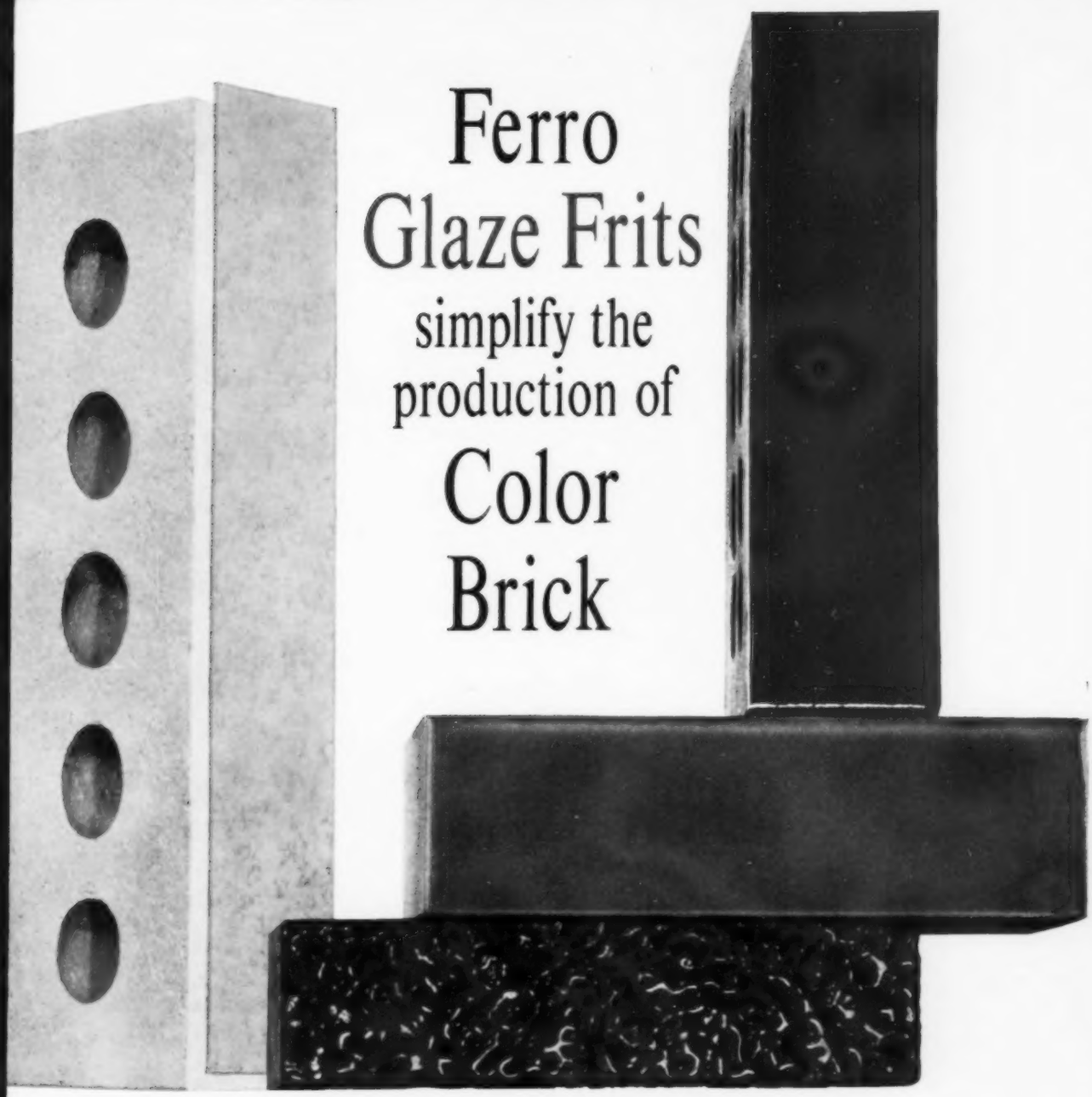

Ferro Glaze Frits simplify the production of Color Brick

Trouble-free production of glazed color brick, and particularly of *low-temperature reds*, is highly dependent on the glaze-frits that are used. On their "clear glass" quality, their workability, their uniformity in production, and especially their *compatibility* with the inorganic colorants required to best provide the colors desired. ■ That there is a big difference in glaze-frits, many producers have discovered. And they find this difference can mean better production, consistently higher quality, in their brick-making operations. ■ Ferro produces glaze-frits for all body materials — fire clay, shale, clay grog and light-weight aggregates. They work well in all colors, in cleanable matte or high gloss finishes. You'll find it profitable to *try* them.

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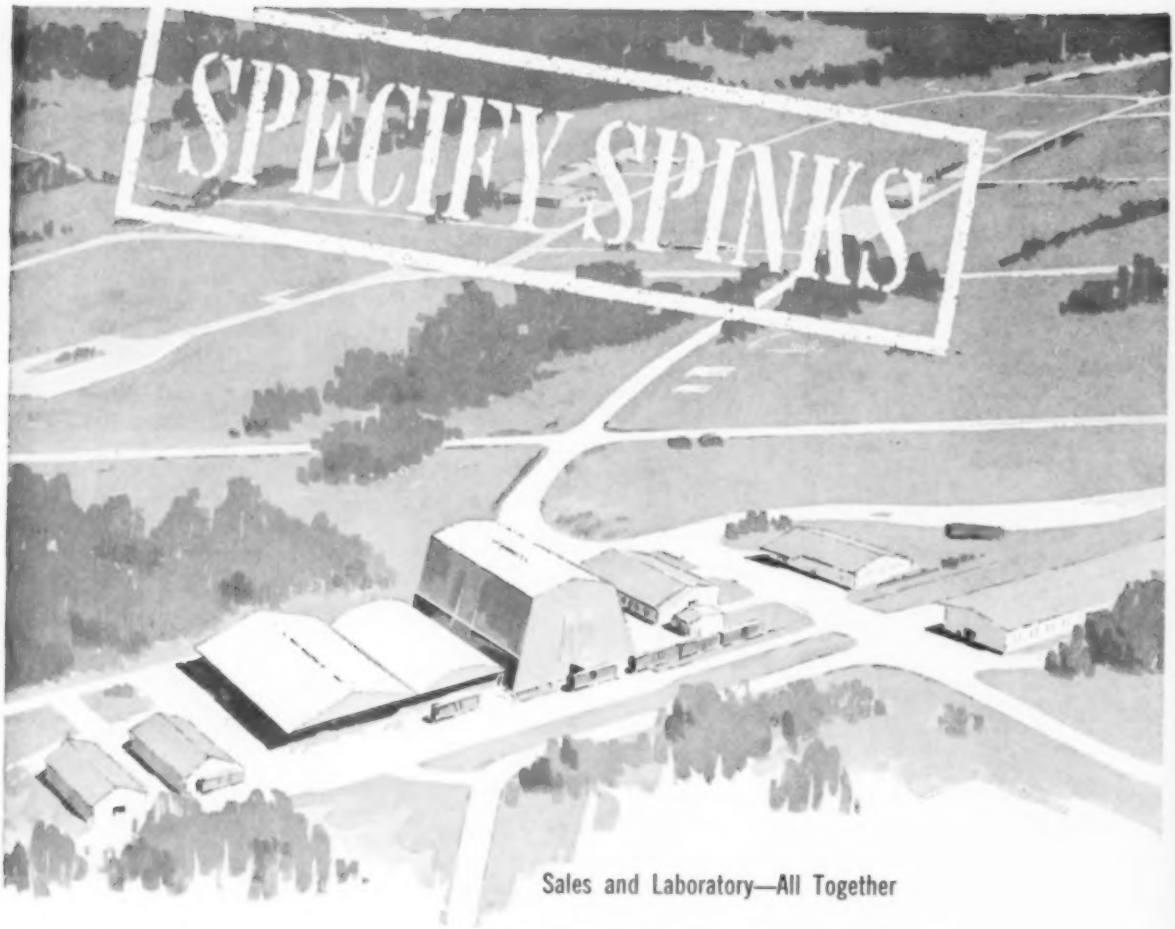

An air view of our plant near Paris, Tenn.

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There are many customer advantages in our centralization of clay storage, processing sales and laboratory.

The customer's needs come first, and every department is tuned to the same "management wavelength."

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Nation's largest known ball clay reserves . . . "at-the-mine" control of every shipment . . . dependable uniformity . . . high quality . . . on-time shipments are all routine assurances provided by our company.

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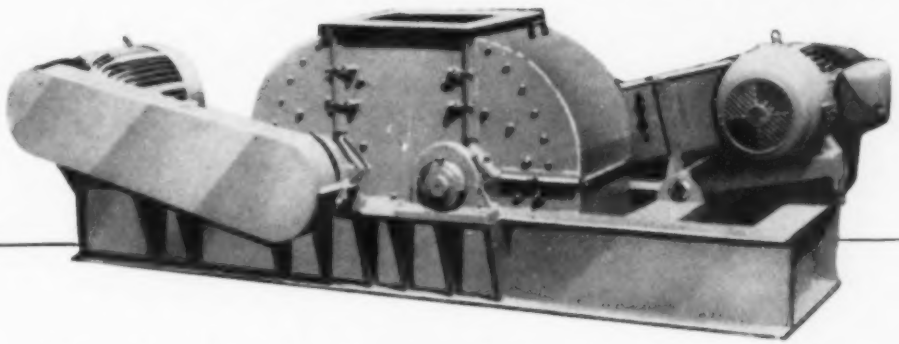
dynomax

DUAL ROTOR PULVERIZER



- Makes dry pans, rim discharge grinders, crushing rools, and ordinary hammer mills out of date.
- Increases screen capacity—makes more fines.
- Don't judge the Dynomax pulverizer by any single action impact mill that you may have known in the past.

Whether your material is hard or soft, moist or dry, sticky or free flowing, fifty tons per hour through 8 mesh is not unusual even in the smaller size mills.

Grinds fine down to 20 mesh with as little as 60 H.P. No sticking or clogging. Excellent mixing action and particle size distribution.

Built in two sizes. Model 424 built with 24 hammers requiring 60 to 80 H.P. will grind up to fifty tons per hour through 8 mesh. Model 632 with 32 hammers requiring 80 to 120 H.P. will grind up to one hundred tons per hour through 8 mesh.

Better material preparation means more uniform particle size distribution. Makes more first quality brick—insures more uniform drying and firing—less lamination—less chipping—higher density—better compaction in the die—stiff mud, soft mud or dry press.

ROTARY KILNS

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If you need calcine in your brick, you are paying for it, whether you have it or not.

Ask for prices. No obligation.

Call Us Collect

or See A. K. Moulton
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LONG CONE DUST COLLECTOR

The Dynomax high efficiency dust collector is built in five sizes requiring 3 to 30 horsepower, depending upon the demands of a particular application. The collector cones are built of heavy gauge steel plate and are bolted to the inlet scroll for easy replacement, Many Dynomax collectors are in use where materials are highly abrasive. This collector does an outstanding job on clay, clay grog, alumina, sand and other like materials.

Consultation on your dust collector requirements is free of cost or obligation. Our engineers will be glad to discuss your dust collection problems with you.

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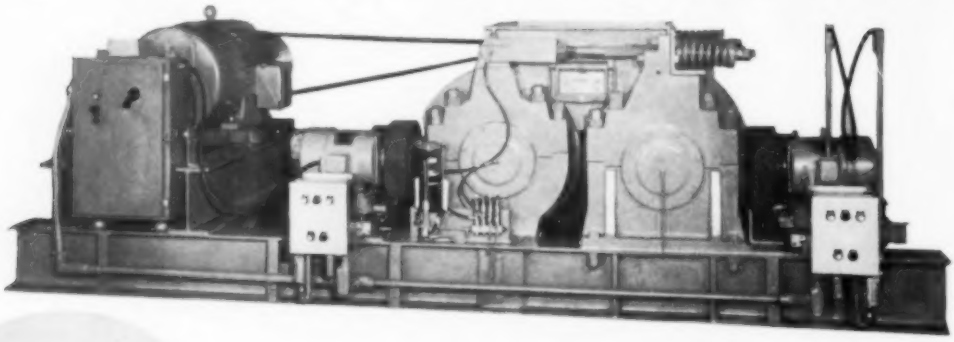
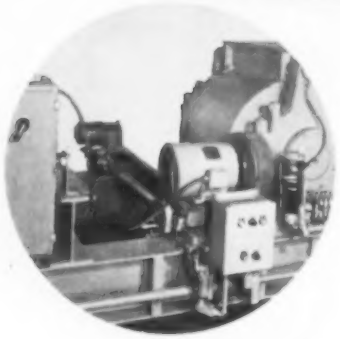




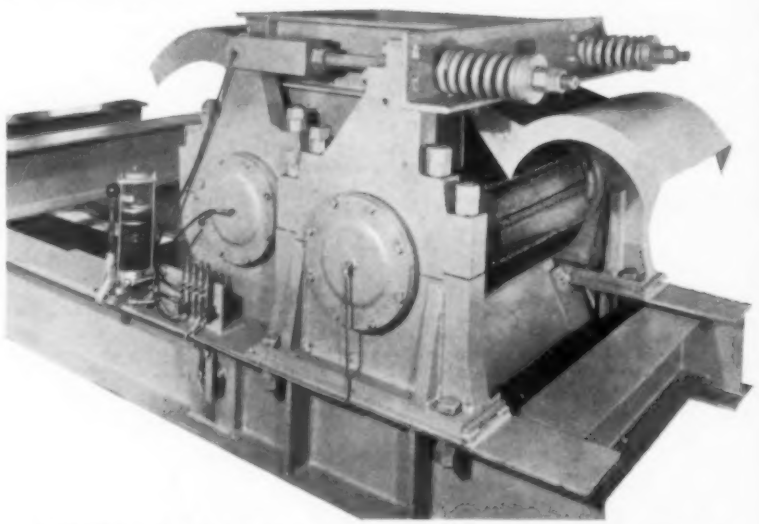
—First in the Industry to offer Precision Grinding from Truly Parallel Roll Faces

This Chambers problem-solver delivers effective high grinding pressures —relief roll pivots to concentrate pressure where needed. Fully automatic 5-HP roll grinders, built to machine tool specifications (see inset), assure accurate rolls and eliminate overtime maintenance. Other features include centralized lubrication, full cartridge bearing housings in 2-piece steel stands, self-aligning roller bearings, 6⅝" diameter shafts, removable manganese steel shells. Manufactured in 24", 16", and 12" wide models.

& Heavy Duty DISINTEGRATOR

The shredding and disintegrating part of any clay job is ably done by this machine. The slow roll has a heavy duty ground manganese steel shell. The fast roll is a solid steel casting with 12 welded-on shredder bars designed for coarse or fine shredding. 24", 16", or 12"-wide models. The roll resurfacing grinders above may be applied to the slow roll.

For further details about these able, long-lasting Chambers machines, write today.



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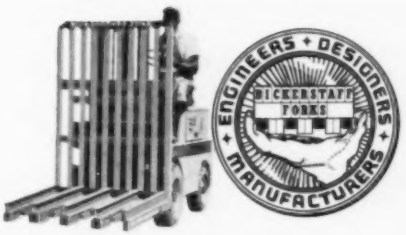
No Hands - No Pallets - No Strapping

A Bickerstaff Fork* is the profitable way to handle brick. It eliminates two costly items immediately - pallets and strapping. It moves brick in and out of inventory, loads direct to truck or freight car and sets and draws kilns faster. That's why Bickerstaff is called the "do-it-all" for brick handling.

* M-M MINIMUM MAINTENANCE ON ALL FORKS

Your brick handling need can be supplied by Bickerstaff engineers. Tell us your requirements - we'll do the rest.



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POWER IS CONDUCTED
THROUGH THE AIR

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- 3 PHASE on larger models
- 5-YEAR GUARANTEE
- ANTI-MAGNETIC SIDE RAILS Either type as shown below

- DUST-TIGHT
- WATERPROOF
- COMPACT, RUGGED CONSTRUCTION
- SCREEN CLOTH INSULATION On both sides for complete protection

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Flux Power Eliminates Z-Bar Connectors
Use either Plain or Stainless Cloth

This major break-through by HANCO ENGINEERS OFFERS OPTIMUM EFFICIENCY in screening and sizing of moist materials. Replacement of cables and laminated flexible conductors is eliminated.

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FOR REFRACTORIES

Three special grades of "PYRAX" pyrophyllite have been developed for use in refractories.

Refractory grades of "PYRAX" pyrophyllite can be used to good advantage in refractory brick, refractory cements, unfired refractories, backwalls, radiants, tile setters, saggers, and other special refractories.

"PYRAX" pyrophyllite has a P.C.E. of cone 26 to 27 and where mixed with small amounts of kyanite its P.C.E. can be increased to cone 28 or 29.

"PYRAX" pyrophyllite refractories when properly compounded have a high strength, will not spall or fail due to temperature gradient.

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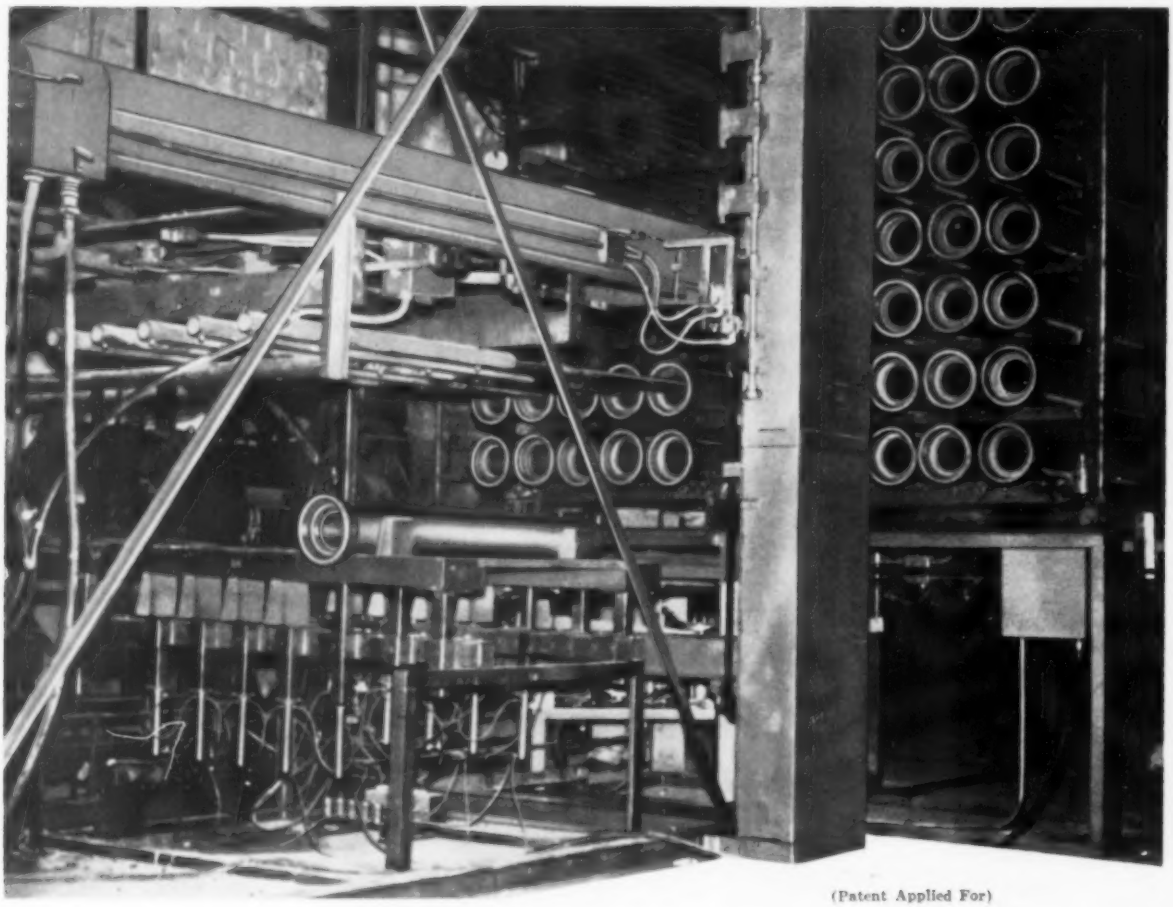
Pearne and Lacy
AUTOMATIC RACK LOADER



(Patent Applied For)

The automatic sequence of operations provide for a continuing flow of pipe from the finishing station to the racks.
Pipe rolls direct from the finishing station to the indexer where it is picked up and inserted into the rack tray. Racks are automatically positioned for pick-up by the trucker. No interruptions in the operation waiting for the trucker. The complete loading operation is automatic except for the trucking. Rack loader is adaptable for all size of pipe handled horizontally. Specially designed light weight racks and trays are also available.

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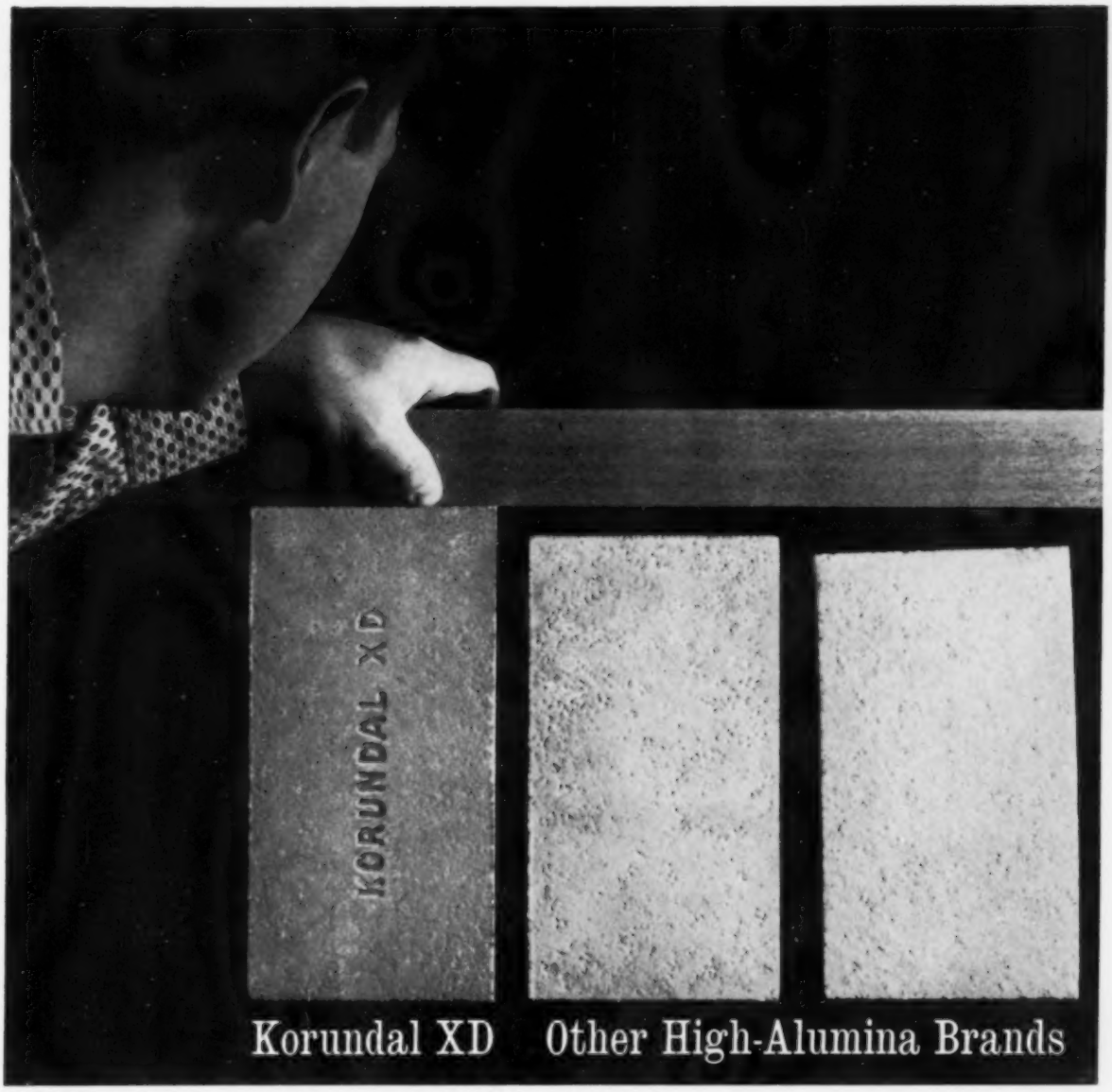

KORUNDAL XD shows no subsidence in extended 3000°F. Load Test

Test shows amazing Hot Load Capacity of new Harbison-Walker Refractory

The hot load test results on KORUNDAL XD compared with similar high-alumina brands are most revealing. Whereas, KORUNDAL XD showed no subsidence in a special, severe load test at 3000°F., the other brands in the same test deformed 5.1% and 9.6% (see above photo).

KORUNDAL XD is very dense, strong, and has good resistance to thermal shock. This unprecedented combination of high hot strength and improved physical properties will suggest solutions for many of your furnace problems. Our engineers will be glad to give you complete technical information.

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AND SUBSIDIARIES

WORLD'S MOST COMPLETE REFRACTORIES SERVICE

General Offices: Pittsburgh 22, Penna.

HW 61-3

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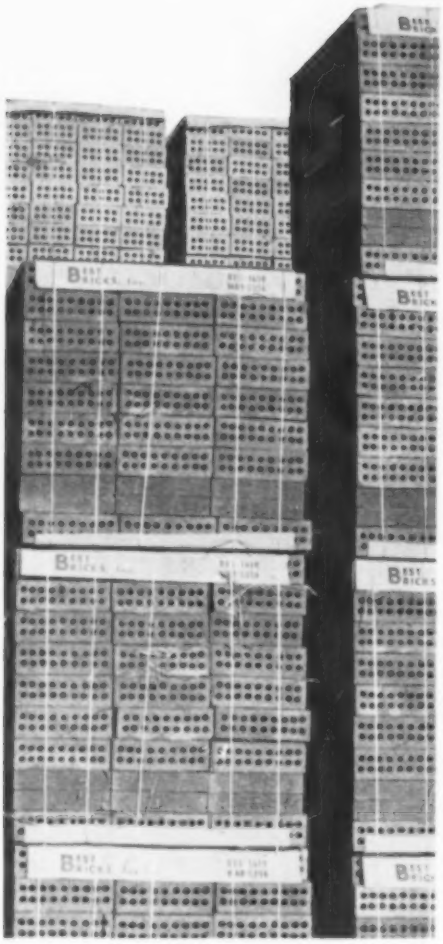


LOWER COST PACKAGING

with the GRIPLOCK

Brick Packaging System

The Griplock self-unitizing brick packaging system utilizes the new "Brick Pak" specification round wire strap—the guaranteed *non-stretch* strap with superior toughness and strength.

"Brick Pak" hot dip galvanized wire *will not rust*. It allows safe handling and shipping even after months of storage under adverse weather and ground conditions.

"Brick Pak" round wire strapping, the heart of the Griplock packaging system, is economical. The completed unit cost averages 10% to 20% less than the flat band components of a comparable package.

GRIPLOCK

GRIPLOCK DIVISION
C. Tennant, Sons & Co., of New York
100 Park Avenue, New York 17, N. Y.

Mobile Griplock Unitizing Jig. Designed for rapid brick packaging with "Brick Pak" wire strapping. Griplock engineers will demonstrate its simple use to your personnel.

FREE DEMONSTRATION AT YOUR PLANT

Griplock engineers will demonstrate the economical Griplock system at your plant site, utilizing standard packaging arrangements or special variations to meet your exact needs for transport by rail or truck. Write or phone: Griplock Division, C. Tennant, Sons & Co., of New York, 100 Park Avenue, New York 17, New York.

Loading Griplock 4-pier truck cubes for delivery to job site 100 miles from plant.

Building a typical Griplock cube, showing fork opening construction.

Two 5-pier, 500 brick, Griplock packages for rail shipment.

Circle Service No. 18

Circle Service No. 19 ⟶

"OUR LABOR COSTS have dropped to 1.2¢ PER BLOCK *Cubed and Yarded* since we installed our new Columbia Automatic Rack Loader and Unloader."

says Mr. Joe Maramonte
Maramonte & Son
Milwaukee, Wisconsin

"We've come a long way in the 39 years since we started this business. Then—making 30,000 9 x 10 x 20 blocks—by hand in a five-months period—was somewhat of a back-breaking record. Today—in that same period of time—with less than four men—we can make a million and a half quality blocks; and because of Columbia automation in our plant, we produce better, more uniform blocks with a lot less hard work on the part of our employees—and last but not least—since our labor costs (cubed and yarded) are only 1.2¢ per block our profits have increased accordingly."

Production units shown in the lower photo include: Standard 6 high, 72 block racks*—Columbia Automatic Rack Loader and Unloader with roll-over. Model 12-Columbia 3 block machine and a semi-automatic cubing offbearer specially designed and built by Maramonte & Son to pick up and put in place a full tier in each cube.

*The Columbia Rack Loader and Unloader can be built to handle special racks of any desired capacity up to 7 block high and up to 5 bays wide.

Left to right—Joe Maramonte, Bud Maramonte, Mike Maramonte and John Romundson, Columbia representative.

For complete information call your Columbia representative or write, wire or phone.

Columbia MACHINE

Home Office: 107 Grand Blvd., Vancouver, Washington
Branches: Mattoon, Illinois; Burbank, California

Manufacturers and world-wide distributors of a complete line of plant equipment for production of concrete products

COLUMBIA BLOCK MACHINES GIVE YOU:

- ★ Automatic Operation
- ★ Greater Production
- ★ Simplified Servicing
- ★ Better Quality Blocks
- ★ Maximum Versatility
- ★ Utmost Reliability

MATERIALS & EQUIPMENT IN THE NEWS

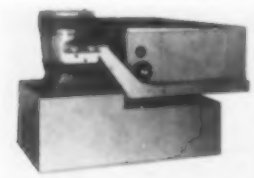
Conveyor Cart

A new conveyor cart for masonry saws, which features a vulcanized rubber top has been developed by this firm.

The vulcanized rubber mat adheres to the aluminum top of the conveyor cart so well that scraping, gouging, cutting, etc., will not remove it. In addition to this 100% adhesion feature, the new conveyor cart also features an improved non-skid surface, and long life, abrasion resistent ¼" thick rubber. *Clipper Mfg. Co.*

Circle Service No. 114

Automatic Weighing System



An improved gross weighing bagger for 6, 8 and 10X sugar, powdered starch and similar free-flowing materials that tend to aerate is offered by this firm.

The G18R fills 100 pound bags at rates up to three bags per minute with an accuracy of ±1/10 of 1%. *Thayer Scale Corp.*

Circle Service No. 115

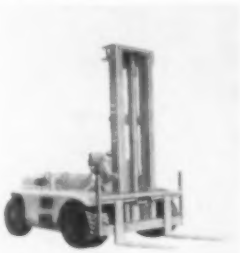
Masonry Drills

A new type electric rotary-impact masonry drill claimed to drill holes in concrete, brick and tile at rates more than 40% faster than present models of comparable size and power has been released by this firm.

The drill is available in a complete series of sizes. The tool operates under conditions of simultaneous high speed rotation and high frequency impact. *Roto-Pak, Inc.*

Circle Service No. 116

Fork Lift Trucks



This firm's new line of fork lift trucks, with lift capacities from 10,000 to 24,000 pounds, are the first heavy duty lift trucks with a fully unitized body and frame. Construction of heavy steel plate affords the lift truck with unprecedented rigidity and operator and component protection. *Gerlinger Carrier Co.*

Circle Service No. 117

Portable Masonry Saw

A new compact masonry saw known as Maintenance-Man Jr. has been announced by this company. The saw is specifically designed to reduce machine weight and size without sacrificing strength, performance or power. The machine is compact enough to load in the trunk of most cars. *Felker Mfg. Co.*

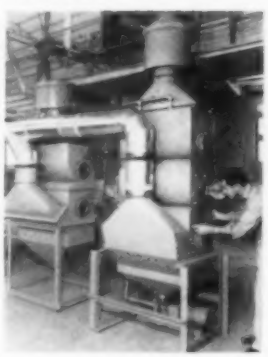
Circle Service No. 118

Speed Reducers

This firm has announced the addition of vertical units to its new line of fan-cooled worm gear speed reducers. Nine sizes, ranging from 3-inch to 12-inch center distances, are available. Ratios extend from 4 1/7:1 to 95:1; ratings are fractional to 175 hp. *Eaton Mfg. Co.*

Circle Service No. 119

Scrubber



A new variable-orifice, Hydro-Volute scrubber developed by this firm, develops high scrubbing efficiencies despite substantial variations of air or gas flow. The Hydro-Volute Scrubber is not limited by either high moisture or temperature conditions of effluent gas and can be used virtually anywhere in industry where a dust, fume or odor problem exists. *The Johnson-March Corp.*

Circle Service No. 120

Boom Unloader

For quick, flexible unloading of cubes of brick or other building materials, this new hi-lo boom unloader combines the advantages of a crane and a fixed-boom unloader. When boom is raised to its maximum angle of 60° from the horizontal, a clearance of 20 feet is provided from the bottom of the fork to ground. This allows the cubes to surmount walls, fences, or even roof tops. *Side-O-Matic Unloader Corp.*

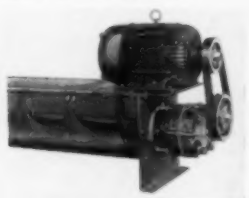
Circle Service No. 121

Bus Bar

This firm has announced a new flexible bus bar for low voltage current for heating vibrating screens. The most likely part to wear out in any heating hook-up on vibrating screens is the conductor that carries the current from the transformer to the side rail. It is claimed that this basic weakness has been overcome in this new bus bar. *Screen Heating Transformers, Inc.*

Circle Service No. 122

Screw Conveyor Drive



A compact screw conveyor drive especially designed for short conveyor flights and low horsepower requirements has been announced by this firm.

The new unit, available in many speed ratios, consists of a double reduction speed reducer with packing gland and driving shaft which mounts on a trough end. *Dodge Mfg. Co.*

Circle Service No. 123

New slanted "full-vision" cowl that makes load pick-up unusually fast and easy, is an outstanding feature of Towmotor Stream-Liner Series fork lift trucks (above). Load capacities, 3000 to 5000 lbs. Diagram below shows how operator is able to see within 12" of the heel of forks.

TOWMOTOR'S ON THE MOVE

—in more plants, in more ways, with more money-making features. On the move, handling more materials, gaining lost storage, speeding distribution. On the move, raising productivity, lowering costs, increasing profits. Get going with Towmotor fork lift trucks and carriers—made only by TOWMOTOR CORPORATION, CLEVELAND 12, OHIO.

TOWMOTOR
THE ONE-MAN-GANG®

Circle Service No. 20

Rotary Batch Mixers

Rotary batch mixers up to 60 cu. ft. capacity now are being offered by this firm. The new, larger mixers also incorporate design improvements for faster batching cycles. Design changes include larger intake and discharge ports on the 200 to 360 cu. ft. models. *Munson Mill Machinery Co.*

Circle Service No. 124

Industrial Furnace

A furnace designed to operate continuously at elevated temperatures in the vicinity of 2200°C (3992°F) has been developed by this firm. The new furnace utilizes a lining in the hot zone of a new fused stabilized zirconia refractory, a valuable military and industrial research tool since its development by the Norton Co. in 1951. *C. M. Manufacturing and Machine Co.—Norton Co.*

Circle Service No. 125

Radiation Pyrometer

A radiation pyrometer which measures temperature up to 4000°F in applications such as industrial heating furnaces, glass tanks, open hearth furnaces, and rotary kilns is now available from this company. Designated Pyrotron® Radiation Pyrometer, the unit measures the intensity of radiation from a hot object and, in conjunction with an electrical receiver, converts the radiation measurements into temperature measurements. Accuracies within plus or minus 1% of the temperature span are achieved. *Bailey Meter Co.*

Circle Service No. 126

Tractor Shovel

Especially valuable to the industrial user is the stand-up operation of this model. This feature enables the man using the machine to mount and dismount quickly enough to be a significant time and fatique saving factor. *Clark Equipment Co.*

Circle Service No. 136

NEW LITERATURE

Controlled Atmosphere Tempering Units—Bulletin D-61. *Ipsen Industries, Inc.*

Circle Service No. 127

Air Separators—Features data and specifications on mechanical air separators. (Bulletin No. 90) *Combustion Engineering, Inc.*

Circle Service No. 128

Single-Roll Crusher—Complete information needed for evaluation of a crusher. (Bulletin No. 2025) *Pennsylvania Crusher Div.*

Circle Service No. 129

Conveyor Weighting—Specifications and data on material weighing on conveyor belts with the firms pneumatic integrator. *B-I-F Industries, Inc.*

Circle Service No. 130

Trolley Conveyors—Complete information needed for design of a trolley conveyor system. *Link-Belt Co.*

Circle Service No. 131

Dryers, Coolers, Heaters—Contains complete information on selection of dryers, heaters and coolers, (No. 16-E) *Hardinge Co.*

Circle Service No. 132

Motodrive—Completel ine of company's line of motor drive equipment. (Catalog G-100) *Reliance Electric & Engineering Co.*

Circle Service No. 133

Wall Reinforcing—"Investigation of Continuous Metal Ties as a Replacement for Brick Ties in Masonry Walls." *Dur-O-Wal Div.*

Circle Service No. 134

Builders Tools—Catalog on company's line of contractor and mining air tools. *Thor Power Tool Co.*

Circle Service No. 135

an investment in efficiency...

When this plant owner specified *Overstrom* Electrically-Heated Vibrating Screens, it was more than merely a matter of "buying some equipment". The decision was a planned investment in dependable, trouble-free screening efficiency which he knew would pay dividends in better over-all plant performance. Reduced circulating loads; lower grinding costs; more clay through per operating hour . . . He knew he stood to gain by using the best—which is *Overstrom!*

New literature, just off the press—a four-page brochure—"Methods For Removing Iron Pyrites and Carbonates." Write for your free copy.

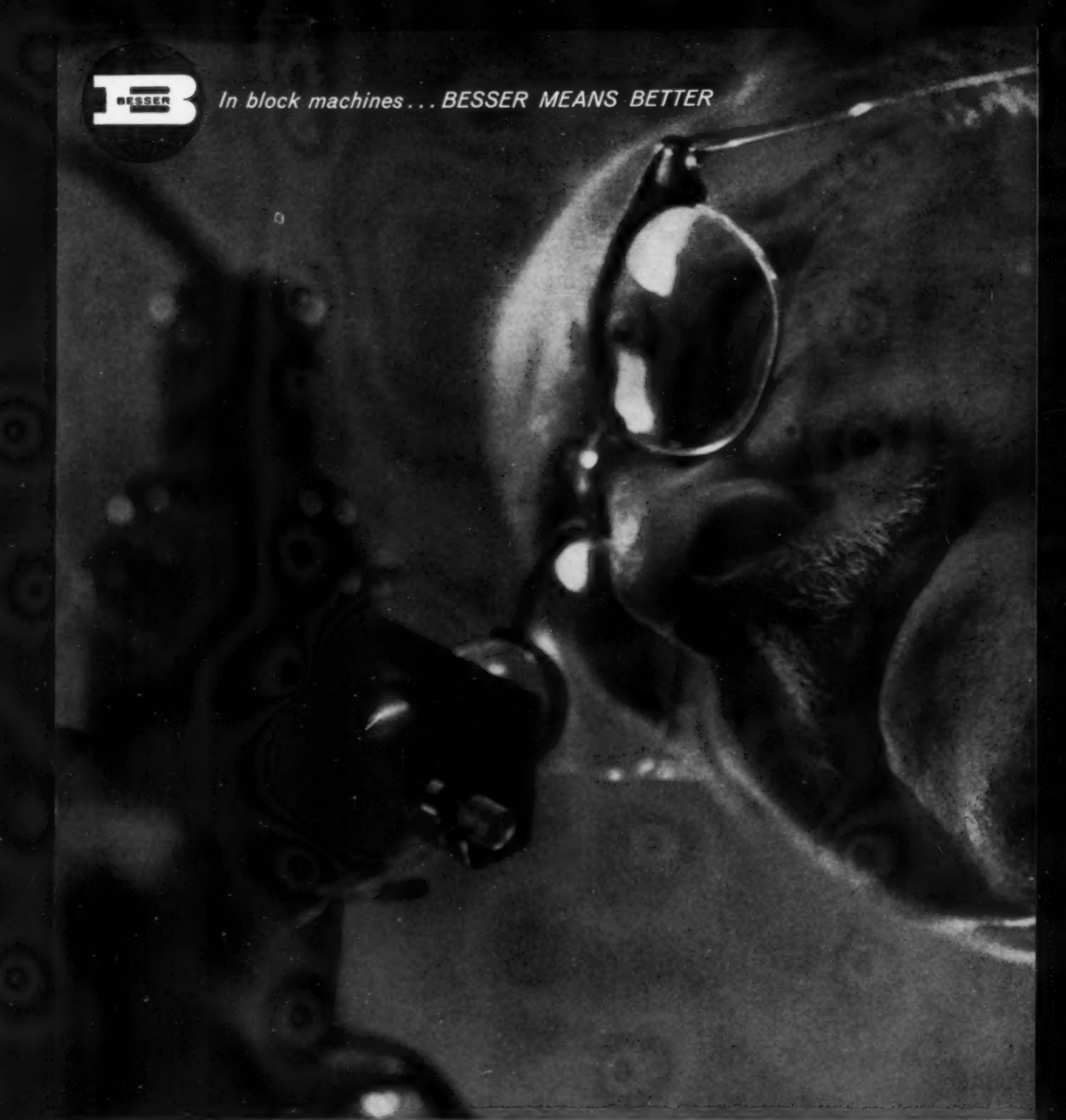
OVERSTROM VIBRATING SCREENS

OVERSTROM & SONS, INC. • Dallas, Texas • Alhambra, California • USA

address inquiries to: 1031 South Haskell Avenue, Dallas 23, Texas

Circle Service No. 21

Circle Service No. 22→



His eye is on your blockmaking profits! He's one of Besser's hard-to-please craftsmen who guard Vibrapac quality. The profit side of your ledger makes you pleased he's so fussy — happy that "good enough" is not good enough for him. He and other experts carry out Besser's 100% inspection program. They are the reasons why you can count on long operating life from your Vibrapac — why your maintenance costs are low, downtime practically nil — why you have fewer culls. From start to finish, Besser takes extra pains to make Vibrapac the soundest equipment investment in the business. / Besser Company, Dept. 139, Alpena, Michigan, U. S. A.

A1-249

13% increased output.

with lowered operating costs!

Wadsworth Brick and Tile reports B&W Insulating Firebrick kiln cuts 16 to 18 hours from 120 hour cycle... and reduces fuel costs 17%.

Accurate cost and operating figures, based on carefully weighed tests, have conclusively proved the superiority of B&W Insulating Firebrick to Wadsworth Brick and Tile Company, Wadsworth, Ohio. The B&W Insulating Firebrick lined kiln (shown at left) is providing increased output—an extra burn for every six —17% lowered fuel costs and higher quality output.

This kiln, formerly built of heavy firebrick, was completely rebuilt with a B&W K-20 IFB crown and sidewall and with B&W K-26 IFB behind the bagwalls. B&W IFB were selected for the rebuild as a result of Wadsworth's satisfaction with these brick in previous applications.

B&W Insulating Firebrick offer important savings to kiln operators because *they are the lightest insulating firebrick made.* Thus they offer the highest insulating value for the greatest fuel savings . . . lowest heat storage for fastest cycling and best temperature control.

For more information on the uses of B&W Insulating Firebrick in the structural clay products industry, write for Bulletin R-43 to The Babcock & Wilcox Company, Refractories Division, 161 East 42nd Street, New York 17, New York.

The arrow points to the Wadsworth kiln which is completely constructed of lightweight B&W Insulating Firebrick.

R-830

B&W

THE BABCOCK & WILCOX COMPANY

REFRACTORIES DIVISION

B&W Firebrick, Insulating Firebrick, and Refractory Castables, Plastics, Ramming Mixes, Mortars, and Ceramic Fiber.

Circle Service No. 23

SUPERLITES

CAN'T BE BEAT FOR

Lowest Cost—Lowest Weight—Versatility

SUPERLITES give you the most for the least first cost and operating cost. **SUPERLITES** are most versatile. They can be installed on any flat bed truck or trailer you may have, regardless of length or capacity.

Recently additional **SUPERLITE UNLOADERS** have been added to the fleets serving the following outstanding leaders in the clay products industry. Constantly, more and more brick manufacturers are buying more and more **SUPERLITES.**

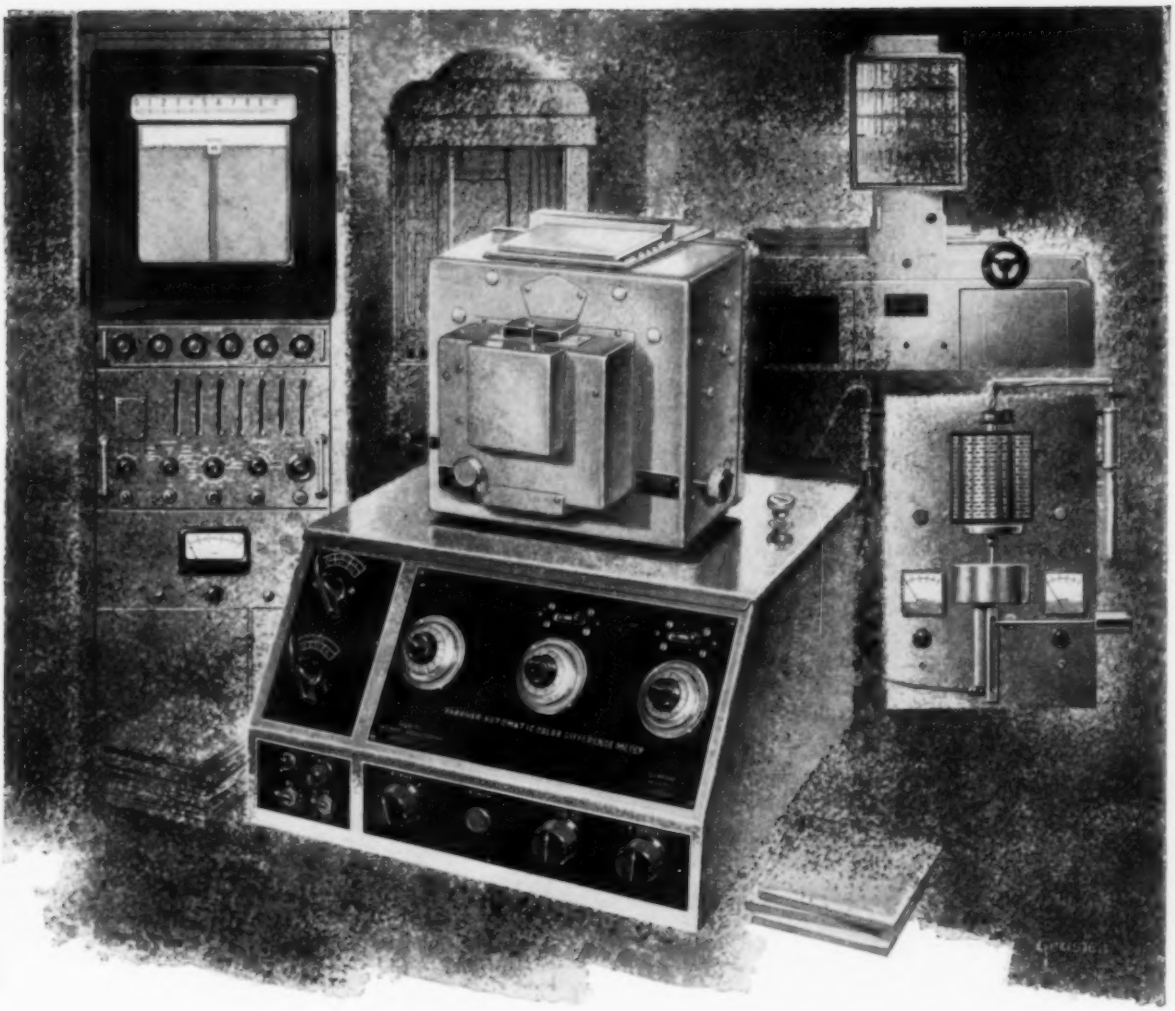
Kelsey-Ferguson Brick Company	East Windsor Hill, Conn.	12th unit
Richland Shale Products—Columbia Brick & Tile	Columbia, South Car.	34th & 35th units
Sayre & Fisher Brick Company	Sayreville, N. J.	17th & 18th units
Elgin-Standard Brick Company	Elgin, Texas	3rd unit
Tri-State Brick & Tile Company	Jackson, Miss.	6th unit

WRITE OR CALL

BUILDERS EQUIPMENT COMPANY

P.O. BOX 7143
PHOENIX, ARIZONA
Telephone Numbers:
·YEllowstone 7-4741
·YEllowstone 7-4742

Circle Service No. 25



nothing but the best for TAM customers

Well aware of the importance of delivering consistent high quality in quantity, TAM sets the highest standards and . . . equips trained personnel with the latest means to assure only the best for our customers. For instance, before being released for shipment, representative samples from each lot of TAM opacifiers are thoroughly evaluated in commercial glazes. Further assurance of the best when you specify and buy from TAM.

TAM OPACIFIERS . . . the complete line

. . . with complete laboratory service

- SUPERPAX A
- SUPERPAX
- ZIRCOPAX
- DOUBLE SILICATES
- OPAX
- OPAX S
- TREOPAX

Write for your copy of the new TAM Glaze Opacifier brochure detailing formulas . . .

TAM
DIVISION NATIONAL LEAD COMPANY

**Executive and Sales Offices:* 111 Broadway, New York 6, N. Y.
General Offices, Works and Research Laboratories: Niagara Falls, N. Y.

*Please contact your local TAM Field Engineer or our New York City offices for prompt attention to your request.

Circle Service No. 26

TERRIFIC!

— and how long will the flexing member last?

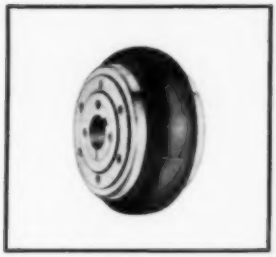
Good question. The heart of Para-flex is a tire with synthetic tension members bonded together in rubber—which provides a flexing body that automatically compensates for *all combinations* of misalignment and end float, and absorbs vibration as well!

This amazing coupling has now been used in American industry 4 years. Thousands are in operation—in steel mills, paper mills, oil fields, mines, quarries, chemical plants, everywhere—and in these 4 years, replacements of elements have been negligible.

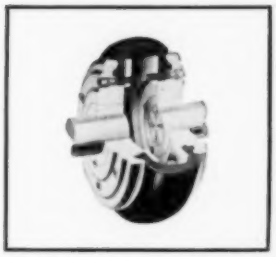
Dodge Standard Para-flex takes angular misalignment up to 4°, parallel misalignment up to 1/8" and end float up to 5/16" depending upon the size of the coupling and the duration of shaft displacement.

Dodge Para-flex is available in 3 types—Standard, Flywheel and High Speed (shown at right). The Standard type is stocked in capacities up to 3640 hp at 910 rpm. Ask your Dodge Distributor, or write us for complete technical bulletin.

Dodge Manufacturing Corporation, 4900 Union Street, Mishawaka, Indiana



The new idea in flexible cushion couplings, with a flexing member that "swallows up" misalignment.



No lubrication, no maintenance. Replace flexing element without moving driver or driven machine.

Flywheel and High Speed Types. For use with motors and internal combustion engines turning up to 5230 rpm.

The Products with the Pluses . . .

DODGE

of Mishawaka, Ind.

DODGE

Para-flex

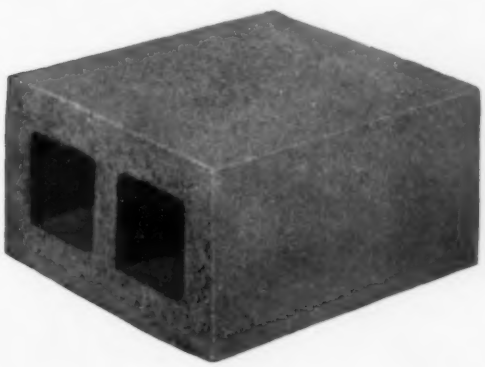
CALL THE TRANSMISSIONEER, your local Dodge Distributor. Factory trained by Dodge he can give you valuable assistance on new cost-saving methods.

Circle Service No. 27

Photo shows PACO 4½" x 8" x 9" car tops set on end and used as perimeter block. Top deck is constructed with 4½" x 8½" x 18" PACO car tops. Each corner has a 7" x 8½" x 9" cored corner block. Perimeter and corner blocks are filled with lightweight insulation.

PACO CAR TOPS can cut your replacement costs as much as 50% — and increase your profits! The reason is simple. Paco Car Tops are made from the mineral pyrophyllite. This unusual, superior raw material permits the manufacture of thinner wall, larger core car top that is lightweight, stronger and highly resistant to extreme thermal shock.

PACO CAR TOPS do not have a softening point below actual fusing point, providing greater resistance to hot load deformation. The result is better, more efficient production. Paco Car Tops are easy to handle and install, and simple to replace individually as needed. There is a PACO engineer as close as your telephone—or write for complete information!



SEE OUR CATALOG IN
Ceramic data book

NORTH STATE PYROPHYLLITE COMPANY, INC.

Telephone CYpress 9-1441 **Greensboro, North Carolina**

OTHER PACO PRODUCTS INCLUDE: • Paco Plastic • Pacocast • Paco H.T. Cements • Paco Fire Brick Mortar • Paco Side Car Brick • Paco Fire Brick • Paco Ladle Lining • Paco Heatzone Compound

Circle Service No. 28

KENNEDY PRODUCTS
FOR THE CERAMIC INDUSTRY

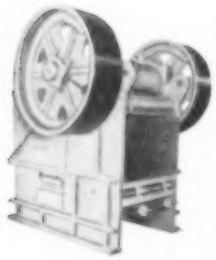
KENNEDY GRANULAR MATERIALS PREPARATION SYSTEM

From the initial raw material to the final blend of ingredients, the KENNEDY system provides the careful preparation, handling and accurate proportioning so necessary to quality ceramic products.

What are some of the advantages of the KENNEDY Designed System?

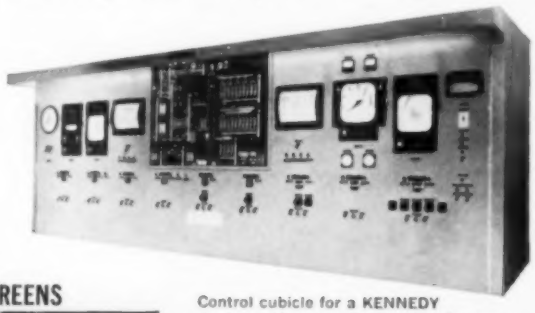
- Single responsibility for the performance of the entire system.
- Maximum utilization of raw material.
- Production of mixes to optimum maximum density within ±1%.
- Highest reproducibility.
- Complete automation; entire operation easily supervised at one station.
- Higher efficiencies, lower labor costs.

A KENNEDY Granular Materials Preparation System can be designed and built for any raw materials which require reduction, fractionation and blending.



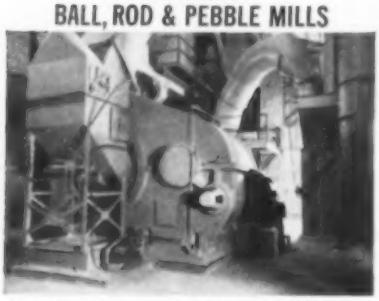
KENNEDY CRUSHERS

KENNEDY Roll Crushers produce high quantities of product within narrow size ranges. KENNEDY Jaw & Gyratory crushers are important for primary and secondary preparation.



Control cubicle for a KENNEDY Granular Materials Preparation System

KENNEDY BALL, ROD & PEBBLE MILLS

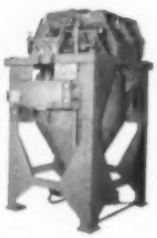


The KENNEDY Air Swept Mill provides unusual control over production of fine grinds. The Pebble Mill eliminates metal contamination in grinds down to 25 microns.

KENNEDY SCREENS

KENNEDY open or closed multideck screens provide the close separation of size fractions required for the most effective use of the available raw materials.

KENNEDY PNEUMATIC CONVEYING SYSTEMS



These systems handle powdered or granular materials without motors, feed screws or other major moving parts. They are simple, flexible and economical.

KENNEDY AIR-FLOAT CONVEYOR

The smooth, durable, porous tile conveying surface of the KENNEDY Air-Float Air-gravity conveyor assures low-cost, maintenance-free conveying of granular solids.

• • •

KENNEDY's reputation for sound design, high performance and quality equipment is recognized in many industries all over the world. We invite your request for further information.

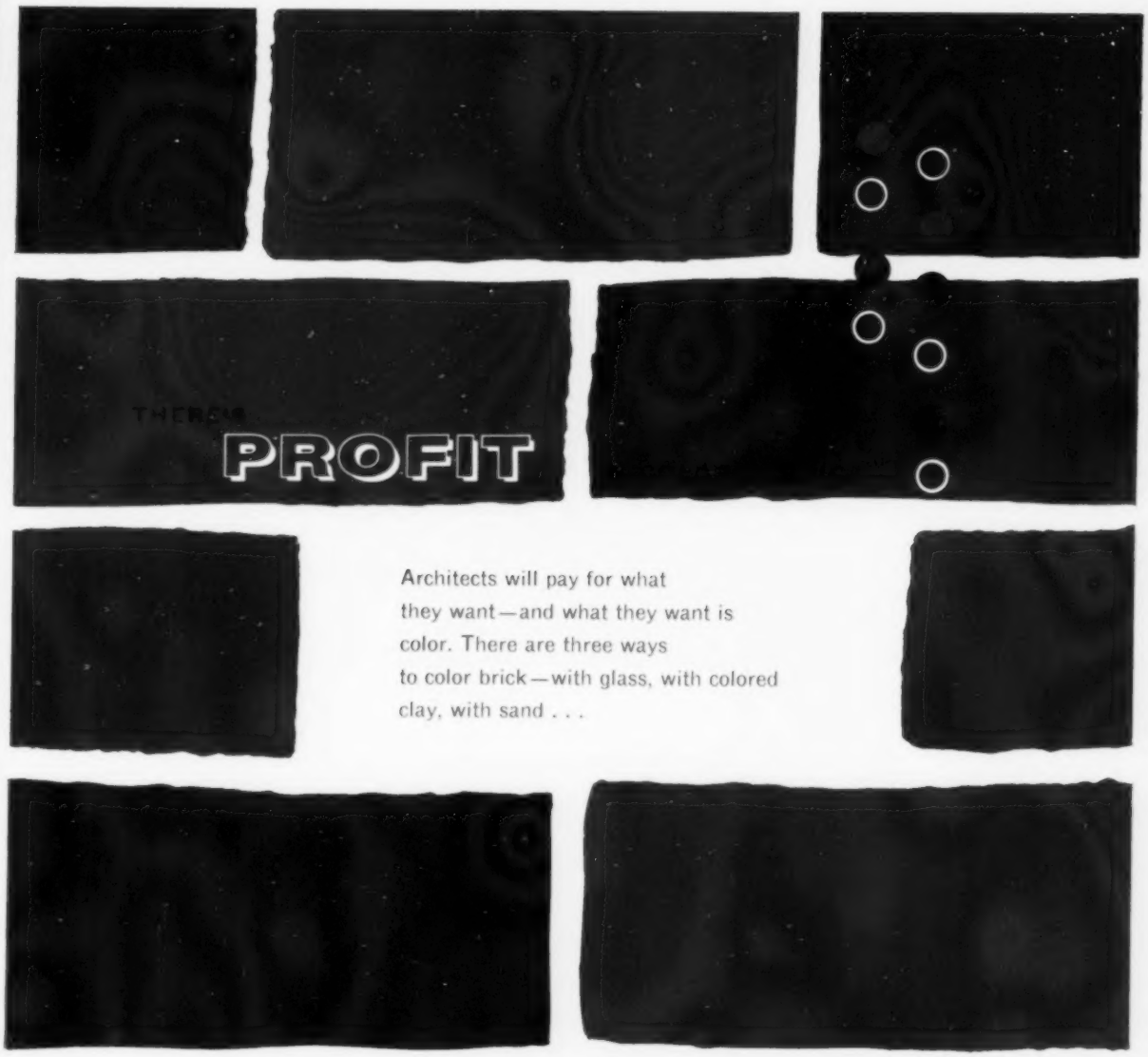
KENNEDY ROTARY KILNS

KENNEDY Kilns, Coolers, Firing Hoods and other accessories are important components of many ceramic materials preparation operations.

KENNEDY VAN SAUN
MANUFACTURING & ENGINEERING CORPORATION
405 PARK AVENUE, NEW YORK 22, N.Y. • FACTORY: DANVILLE, PA.

Primary & Secondary Gyratory Crushers • Jaw Crushers • Roll Crushers • Impact Breakers • Hammer Mills • Rod & Ball Mills • Kilns • Kiln Accessories • Dryers • Scrubbers • Screens • Pneumatic & Mechanical Conveyors • Complete Crushing, Lime, Cement & Carbon Paste Plants
KENNEDY Testing & Research Service

Circle Service No. 29



Architects will pay for what they want—and what they want is color. There are three ways to color brick—with glass, with colored clay, with sand . . .

GLASS.
A ceramic glaze gives brick sparkling, brilliant color that gleams like jewels. Pemco will develop a ceramic glaze formula for your brick. Send pieces of fired and greenware.

CLAY.
Engobes coat bricks with velvety, matt-finish pastels. This is beauty that is new for brick—vastly desirable and very saleable. Send for a sample of dry engobe, ready to use. Just add water and spray on green brick.

SAND.
These coatings give brick a weathered look that architects admire. To make the sand adhere, or to improve the color, write to Pemco about Bricwite—with or without colored stain added.

RESEARCH AND A FLAME

PEMCO®

Ceramic frits, inorganic pigments, vitrifiable glass colors BALTIMORE 24, MARYLAND

Circle Service No. 30

The 1960-'61 Ceramic

Your Guide to "WHO

to ceramics and clay

You'll find catalogs of these industry suppliers in the

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Abbe, Paul O.
Aluminum Co. of America, Chemicals Div.
Aluminium Limited Sales, Inc.
American Clay Machinery Div. of Huber-Warco Co.
American Nepheline, Ltd.
American Porcelain Enamel Co.
American Potash & Chemical Corp.
American Pulverizer Co.
American Zinc Sales Co.
Ashworth Brothers, Inc.
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Bestwall-Certain-Teed Sales Corp.
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Carborundum Co., Globar Plant, Refractories, Div.
Carborundum Co., Refractories Div.
Carolina Prophyllite Co., Glendon Div.
Carpenter Engineering Services
Cedar Heights Clay Co.
Ceramic Color & Chemical Mfg. Co.
Chambers Brothers Co.
Chase Foundry & Mfg. Co.
Chicago Copper & Chemical Co.
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Colorado Fuel & Iron Corp.
Columbian Carbon Co., Mapico Iron Oxides Unit
Commercialores, Inc.
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Crossley Machine Co.
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Denison Engineering Div., American Brake Shoe Co.
Dominion Minerals, Div. of Riverton Lime & Stone Co.
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Hardinge Co., Inc.
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Harrop Ceramic Service Co.
Harshaw Chemical Co.
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Hoeganaes Sponge Iron Corp.
Hommel Co., O.
Huber Corp., J. M.
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International Minerals & Chem. Corp. Consolidated Feldspar Div.
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- ***Complete Buyers' Guide***
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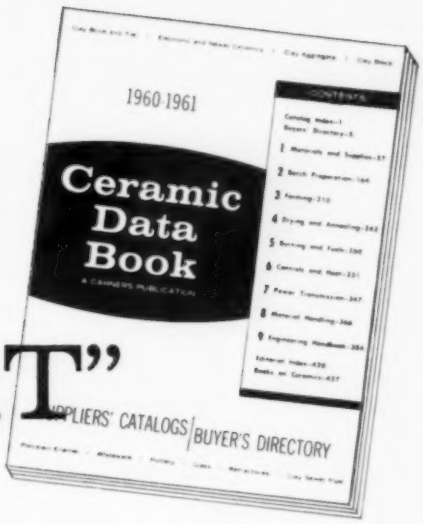

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1960-'61 CDB

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Ceramic Data Book

5 South Wabash Avenue, Chicago 3

A CAHNERS PUBLICATION

For economical, trouble-free combustion systems... Hauck's complete line of Valves, Regulators and Accessories

Micro-Cam Oil Valve. Oil flow control. Clog-proof, uniformly graduated, easy to read and set. Manual or automatic operation. Saves fuel, controls smoke and work spoilage. Thirteen sizes with capacities of 1.1 to 1,000 gallons of oil per hour depending on pressures available.

RRO Oil—Air Ratio Regulator. Maintains constant ratio of oil to air on variable pressure burners at all firing rates. This Hauck design will operate accurately over a wide range of air and oil supply pressures. Unit is usually used to permit a centralized single valve control on the firing of multiple burners. Two models available for 50 to 100 GPH capacity.

Adjustable Flow Valves—Gas or Air. Provide flexibility through adjustment of flow curve. These valves fulfill any exact metering requirements. Mounting bracket available to suit control motor for automatic systems. Fourteen sizes available from 1 to 6 inches. Also available in combination with adjustable port valves for precise control of gas to air ratios.

Type "S" Micro Oil Valve. Lighter construction lower cost. Precision control of oil to burner. Self cleaning, and triangular orifice prevent clogging and flame control problems found with needle valves. Linear adjustment settings easily read. Available with hand lever, head lever or for automatic control. Five sizes, capacities from 1.1 to 174 gallons per hour depending on pressures available.

Zero or Gas Air Ratio Regulators. Provide accurate control of gas flow for either low pressure proportioning mixer or nozzle mix type systems. Features—excellent balancing—soft seat—accurately machined valve system. Thirteen sizes available from ½ to 3 inches.

Adjustable Port Valves—Air or Gas. Straight line linear control. Simple, single knob adjustment to vary port height and capacity. Dependable and accurate control of air or gas to burners. For automatic operation mounting bracket is available to suit any control motor. Fourteen sizes, from 1 to 10 inches.

Micro Metering Oil Valves. For large capacity oil flow. Valve capacity is directly proportional to pointer dial position and settings are repeatedly accurate. Curved grooved disk shearing on orifice plate provides non-clogging linear oil control. Twenty sizes, 88 to 2,000 gallons per hour depending on pressures available.

Butterfly Valves—Air. Low cost air flow control valve. With locking feature to hold setting on manual system. Can be used with automatic control—mounting brackets available along with linkages. Sizes 1 to 6 inch threaded connections, 6 to 14 inch flanged.

Limiting Orifice Valve—Gas. Provides greater flexibility than orifice plate in limiting gas flows to burner. Hauck V-port design requires no critical adjustment. For straight through or right angle mounting. Sizes ½ to 2½ inch threaded connection.

AUXILIARY EQUIPMENT: Safety Shut-off Valve • Basket Strainers • Edge Plate Filters • Excess Oil Temperature Relief Valves • Gas Cocks • Lubricated Plug Cocks • FM Safety Cocks • Rubber Face Plug Cocks • Needle Valves • Globe Valves • Minimum Restriction Valves • Oil Pressure Regulators • Gas Pressure Regulators • Full Flow Oil Pressure Relief Valves

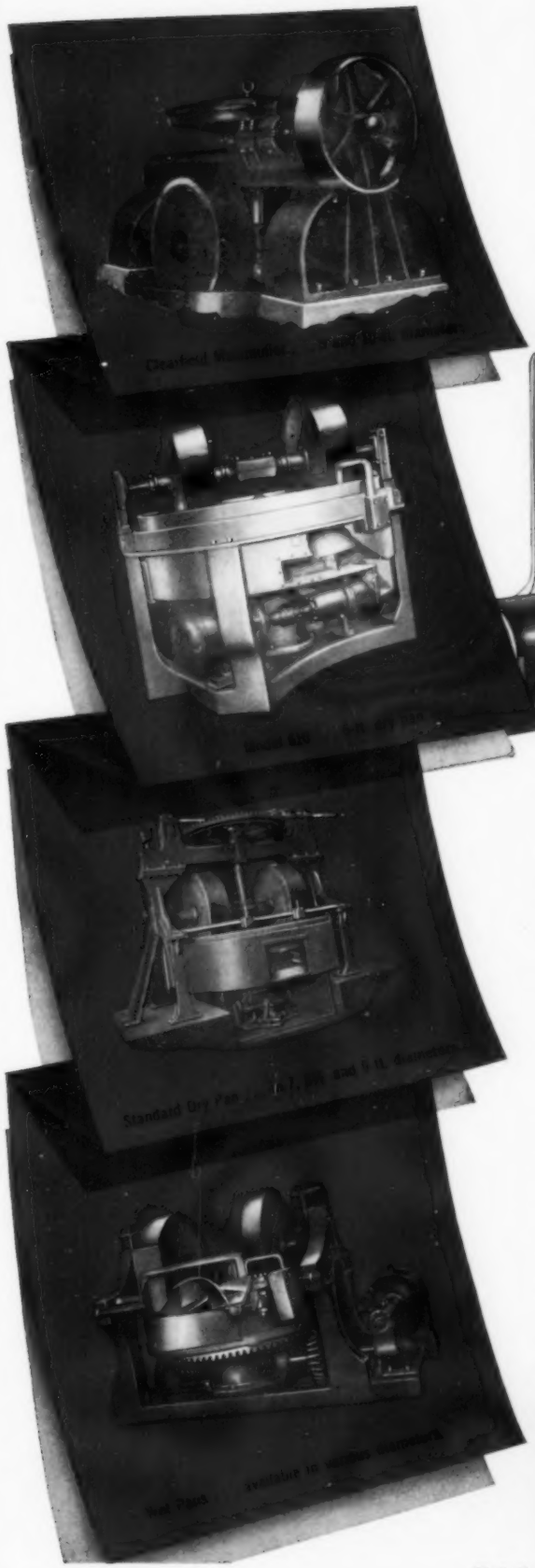
Illustrated brochures available on all these products as well as Hauck's complete line of gas and oil burners.

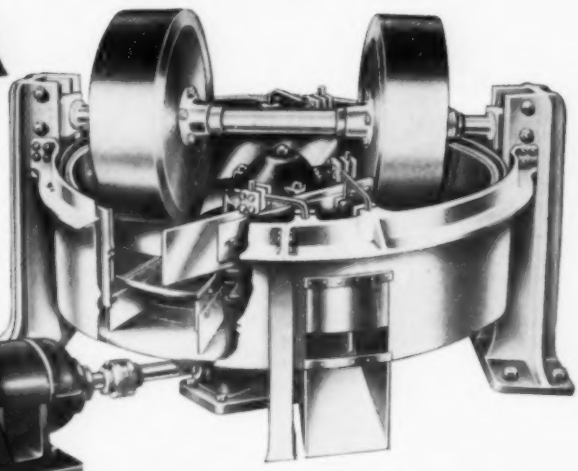
HAUCK

HAUCK MANUFACTURING COMPANY
135D Tenth Street, Brooklyn 15, N. Y.

Circle Service No. 33

You get more tons for less money with CLEARFIELD muller type grinders





Model 900 . . . available in 8½ or 9-ft. diameters.

Whatever your grinding requirements there is a precision-built Clearfield machine to fill your needs exactly . . . to give you years of efficient, economical service.

All Clearfield grinders utilize a revolving pan with screen plates in the bottom, and large heavy mullers spaced far apart to obtain the greatest possible crushing effect. This design principle has proved to be the most efficient, most economical method of grinding . . . and permits the best control of fineness of the grind. And because Clearfield grinders are made of rugged, durable materials you get long, low-maintenance service . . . reduced production costs.

Here's why Clearfield Grinders serve you better:

- Heavy, rugged, rigid construction withstands severe service.
- Crushing weight is sufficient to reduce the hardest clays and shales.
- Weight is distributed to give greatest strength and stability, as well as high capacity, without sacrificing smoothness of operation and ease of adjustment.
- Large crushing area per pan revolution gives high output without excessive pan speed . . . machine-wearing vibration is reduced.
- Ample screen plate area assures proper discharge of material as fast as it is ground.
- Multiple, interchangeable screen plates permit close control of product fineness.
- Parts subject to wear are simple in design, easy to replace.
- Ample size shafts and bearings take heavy loads in stride . . . eliminate down-time.
- Simple, effective method of lubricating all bearings is quick, time saving.

For complete details and sizes, send for our free technical bulletins.

CLEARFIELD
MACHINE COMPANY

CLEARFIELD,
PENNSYLVANIA, U.S.A.

Pacific Coast Representative:
Fernholtz Machinery Company, 8468 Melrose Place, Los Angeles 46, Calif.

Circle Service No. 34

Exact proportioning creates colors customers want

Brick companies get the exact color in every batch by proportioning brick ingredients with Jeffrey WAYTROLS.

JEFFREY WAYTROLS® automatically proportion brick ingredients

Giving the customer the color he wants helps sell bricks as well as automobiles. This need for accurate proportioning of materials explains why so many of these electric vibrating feeders are employed in so many industries.

In hundreds of processing plants, Jeffrey WAYTROLS are automatically weighing and delivering exact quantities for mixes going into every kind of product. The WAYTROL is a precision machine, designed for continuous service . . . sturdy, accurate and flexible. Rate of delivery is regulated through a weighbelt mechanism, but control is electrical, with instant response.

Catalog 941 describes the WAYTROL. The Jeffrey Manufacturing Company, 916 North Fourth St., Columbus 16, Ohio.

If it's conveyed, processed or mined, it's a job for Jeffrey.

JEFFREY

Circle Service No. 35

Circle Service No. 36 —>

HELPING HANDS ...for you!

You are in good hands when you call on Drakenfeld for help in solving color problems. Our technical staff in Washington, Pa., has a long history of successful color engineering for large and small companies at home and abroad.

Drakenfeld facilities include unique innovations in research devices and manufacturing methods. Many "firsts" in better colors and better color application saw the light of day in Drakenfeld laboratories.

The dependable color service Drakenfeld offers every customer is the result of a blend of long experience, varied technical skills, and strict production controls. We invite you to learn how well Drakenfeld can serve you in the wonderful world of color.

This color difference meter is one of several instruments we use to match colors for customers. For help on color problems, consider Drakenfeld a division of your company.

SAND COLORS: Mix with your sand and apply by your normal sand coating technique. Complete palette of colors.

ENGOBE STAINS: Assure a permanent colored surface for your brick. Ask for engobe formulas.

GLAZE STAINS: Complete line—strong yellows, clean pinks, stable blue-green and grays. Laboratory controlled for top workability and uniformity.

GLAZE SPECKS: Long production experience qualifies us to recommend the best speck for your needs, sized to specifications.

PREPARED GLAZES: For producing glazed brick in limited volume without a big outlay for glaze preparation equipment. Wide range of brick and pastel colors; all come ready to mix with water.

CALL ON *Drakenfeld* — *YOUR PARTNER IN SOLVING COLOR PROBLEMS*

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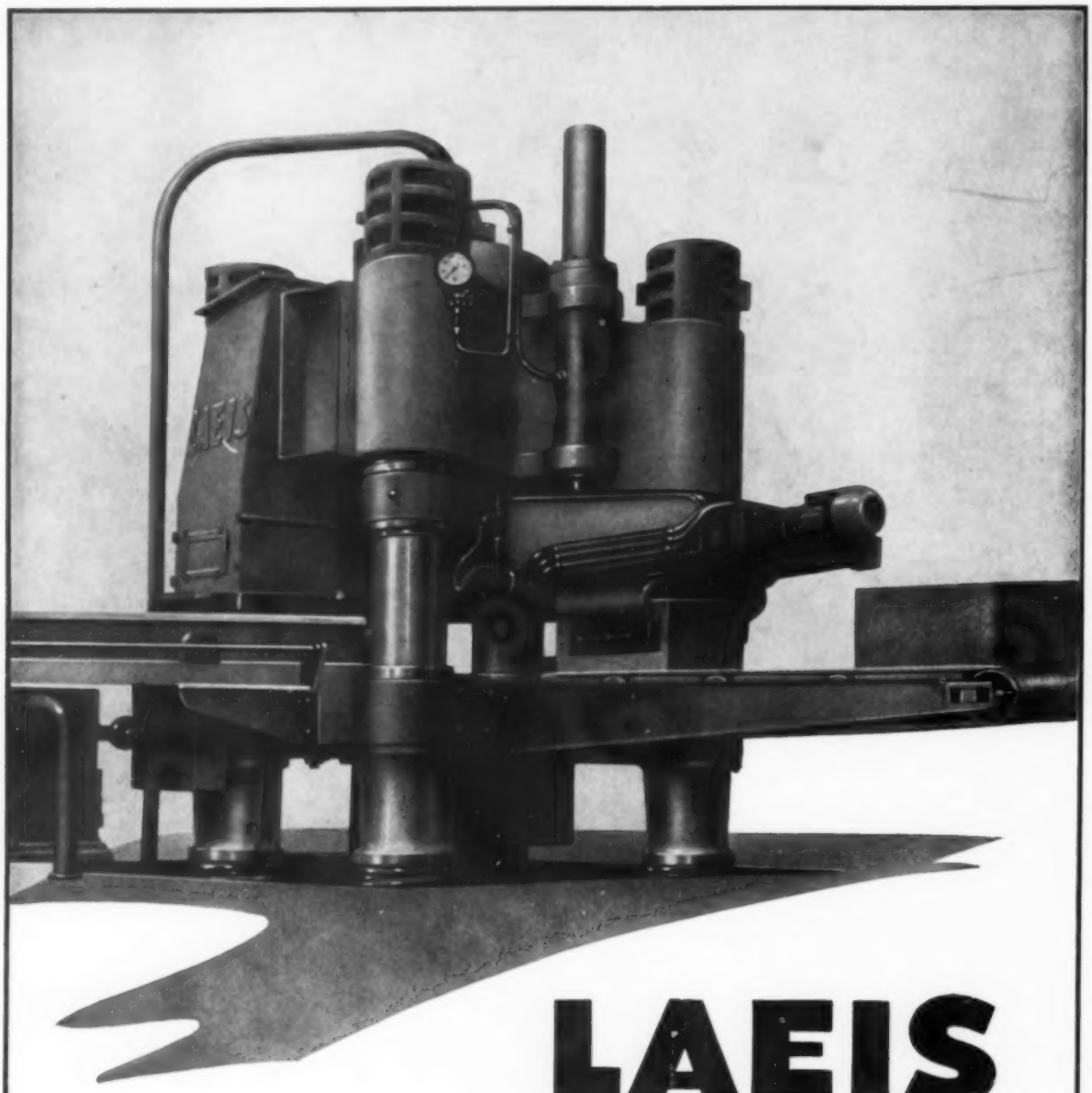

LAEIS

COMPLETELY AUTOMATIC PRESSES "ROBOT"

Hydraulic, fully automatic presses for forming special as well as standard refractory shapes, crucibles, ceramic bonded grinding wheels and large porcelain parts. Suitable for any large shape which requires uniform dense compaction.

Pressures up to 2,000 tons total can be developed. Fully covered by German and foreign patents. These presses are being used most advantageously in the refractory industry for basic refractories, silica refractories, arches, checkers, hollow refractory tiles and blocks.

For complete information and literature write to

LAEIS-WERKE A.-G.-TRIER
Western Germany

Circle Service No. 37

*PATENTS APPLIED FOR

A complete press including Charger Assembly and Control System and having 32 cycling combinations at the flick of a switch.

Photo shows 19" x 9½" x 6" open hearth skew made on the Superior Press.

Announcing the New

SUPERIOR* IMPACT PRESS

- ► *POSITIVE* **Impact Control**
- ► *POSITIVE* **Thickness Control** (with Quick Thickness Change)
- ► *THICKER* **Tile Capacity** (more than any other impact press-6"-8"-9")
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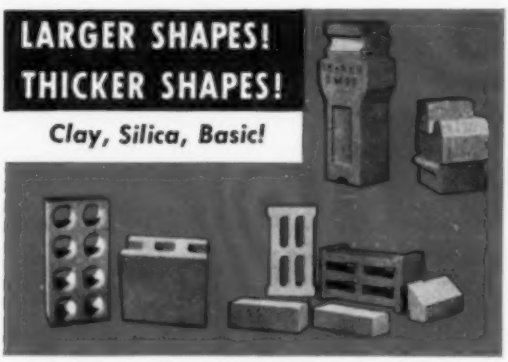

Write for literature.

Technical information and specifications are available in our new literature. Please write us for a copy.

Now you can make larger, thicker shapes—faster and at lower cost than ever before! *The New SUPERIOR Press makes thicker tile than any other impact press.* Shapes up to 6", 8" and even 9" can be handled easily and quickly with most refractory materials. And it's so simple to change from one shape to another because *you can change dies in minutes!*

With the SUPERIOR Press you get equidensity impacting—all the time—with no vibration waves. There is positive step sequence control with full pressure and flow control of all air circuits.

In short, SUPERIOR Press means SUPERIOR PERFORMANCE and you need it first for that reason. The fact that it costs only a fraction of the cost of other presses—and can be installed for a mere fraction of other press installation cost—will prove a most pleasant and profitable surprise. *So don't delay!* Get the SUPERIOR story NOW and get started on more profitable plant operation.

Manufactured by **SUPERIOR SUPPLY SERVICE, INC., Fairfield, Alabama**

Sold by

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Circle Service No. 38

STAR Foundry & Machine Co., Inc.

NEW LEXINGTON, OHIO • PHONE FIreside 2-2377

★ ENGINEERS ★ DESIGNERS ★ BUILDERS ★

Engineering Service
Special Machines
Metal Fabrication
Sewer Pipe - Deairing Feeders
Transfer Cars

Electrified Vibrating Screens
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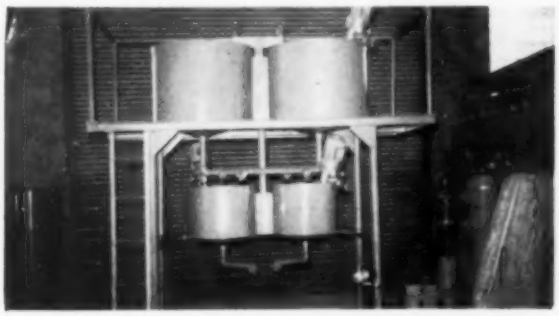
Car Moving Systems



SEWER PIPE JOINTING EQUIPMENT FOR SLIP SEAL OR POLYESTER JOINTS

Precasting Conveyor for 4" through 12" pipe—up to 2,200 4" or 6" pipe per shift; 1,500 8" pipe per shift. Productivity over stationary method up to 3 times the number of pipe per man hour.

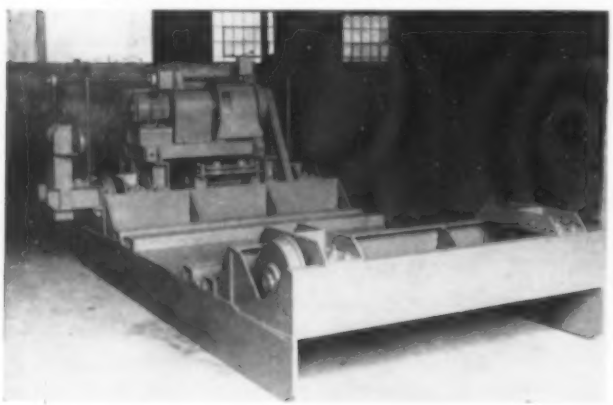
Polyester Conveyor for 4" through 12" pipe—1,000 8" pipe per shift typical capacity. Illustration above left shows 8"—4' pipe on conveyor.

Slip Seal Dies—4" through 36" sizes. Polyester Joint Dies 4" through 24". Dies per standard or special specifications.

Precasting Heating Vat—natural gas, L.P., or oil from 9 cu. ft. to 16 cu. ft. and 25 cu. ft. sizes. 16 cu. ft. size will deliver up to 4,500# properly heated asphalt per shift.

Polyester Batching System—complete with mixers, pump, and mixing gun. Tanks and piping arranged for ease of operation and cleaning. See illustration above right.

Miscellaneous accessories such as pipe racks, hoists, monorails, cranes, clamps, etc., are available for specific installations.



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Star transfer cars are designed and built for hauling kiln cars weighing up to 75,000#. They are available in pitless or pit type models. The propel drive can be arranged for fluid coupling, hydraulic motor or D.C. motor components. For ease of kiln car handling, Star transfers can be furnished with winch and sheave assemblies, telescoping hydraulic car propellers or side cars.

Pitless transfer car with winch, folding outrigger sheave and fluid drive propel arrangement shown.

SCREENS

Star "Electrified" Vibrating Screens are available in 3' x 5', 4' x 6' and 5' x 6' sizes arranged in single or multiple widths and single or multiple decks.

Efficient screening of dry or damp materials is assured. Electric vibrators give proper cloth vibration and adaptable electric cloth heating unit will serve steel and stainless steel cloths. Applications in clay, limestone etc., 4 through 40 mesh.

Heating kits and vibrating kits are also available for existing screen installations.

Twin 5' x 6' double deck unit is shown in illustration at right or above.

For further details, specific recommendations, quotations or discussion of equipment requirements, write or phone

STAR Foundry & Machine Co., Inc.

NEW LEXINGTON, OHIO • PHONE FIreside 2-2377

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From Plant To Brick Mason . . .
Pack-Hauler Does All The Work

for less money . . . in less time . . . with less manpower.

Pack-Hauler picks up brick at plant and puts them down right where the crew is working. In a matter of minutes a load of brick can be delivered and the Pack-Hauler headed back for another profitable load.

A single operator does the job with the Pack-Hauler in less time, over long or short hauls.

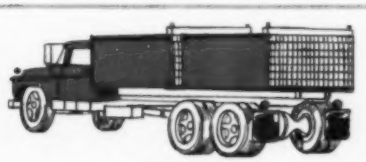
Reduce your truck fleet . . . pick up more profits with the Pack-Hauler.

Write today for complete information.

American Truck Body Company

P. O. BOX 1391 • PHONE MERCURY 2-6318 • MARTINSVILLE, VA.

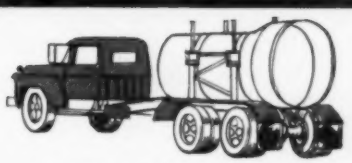
PACK-HAULER®



TANDEM

PACK-GRAB

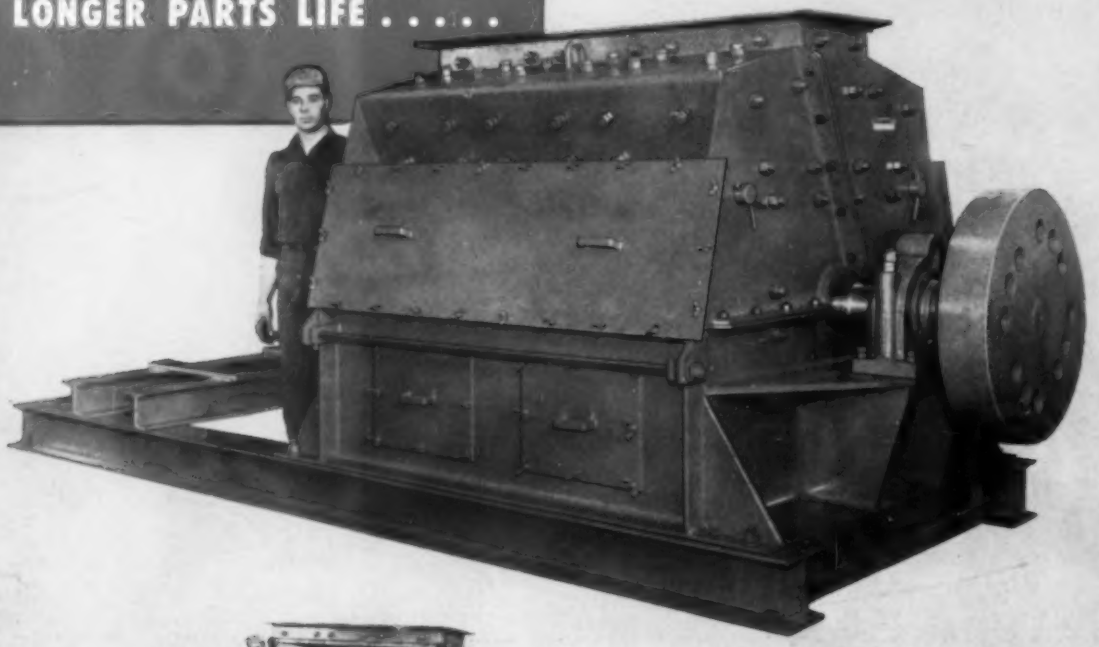
Circle Service No. 40

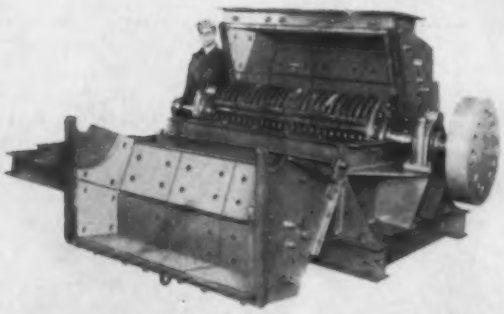


PIPE-HAULER

NEW DUAL "2-POINT" ADJUSTMENT INSURES MORE UNIFORM GRINDING, LONGER PARTS LIFE . . . . .

WILLIAMS *Reversible* HAMMER MILLS





Williams Reversible Hammer Mill with cover open. Note these features:

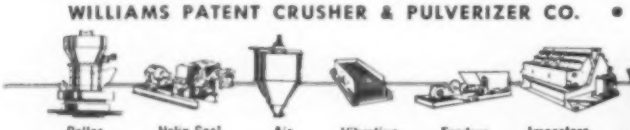
- Super-strong reinforced steel plate frame
- Renewable wear-resistant manganese steel liners
- Heavy duty oversize forged steel rotor shaft
- Anti-friction self-aligning roller bearings in dust-tight housings
- Complete accessibility to interior for quick parts changing

It's another Williams "first"—features not available in other hammer mills—that now makes it possible to maintain the original close clearances of *both* grinding plates *AND* cage sections against the rotating hammers. This easy-to-make "2-point" adjustment, in the most critical grinding area inside the hammer mill, gives absolute assurance of consistently uniform product quality.

In addition to the advantages of the Dual "2-Point" Adjustment, a Williams Reversible Hammer Mill substantially lowers upkeep expense by cutting hammer cost. Hammers can be operated in one direction today and another tomorrow simply by installing a simple reversing switch on the driving motor. Manual reversing of hammers no longer necessary. Grate bars also last longer. The double set of reversible manganese breaker plates, which last twice as long as other types, give four times the service! Maintenance and downtime are cut 50% or more.

Get all the facts about the hammer mill with *ALL* the top features.

WILLIAMS PATENT CRUSHER & PULVERIZER CO. • **2709 N. BROADWAY** • **ST. LOUIS 6, MO.**



WILLIAMS
CRUSHERS GRINDERS SHREDDERS
Oldest and Largest Manufacturers of Hammer Mills in the World

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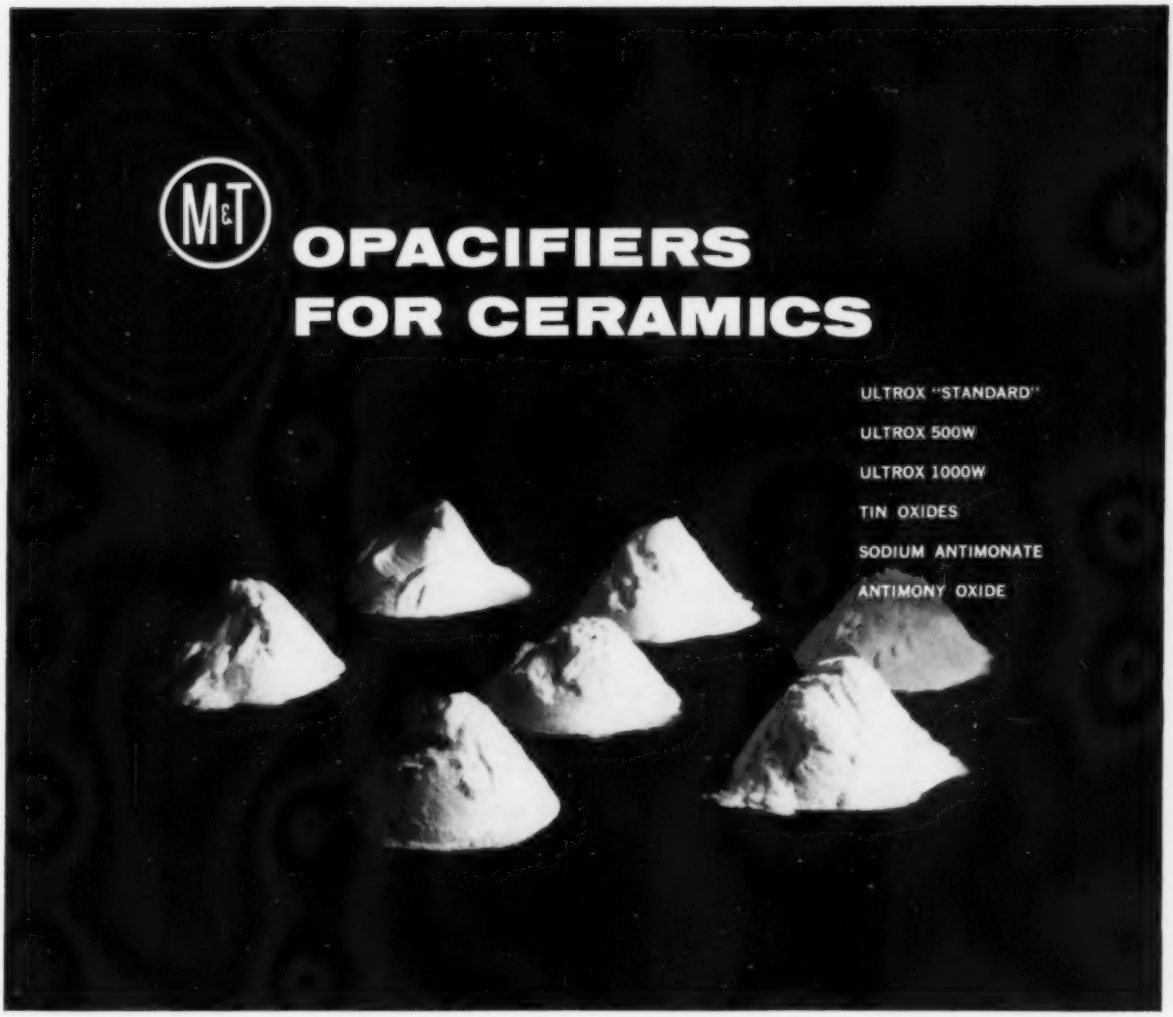


Brick and structural tile glazes improved 2 ways with ULTROX®

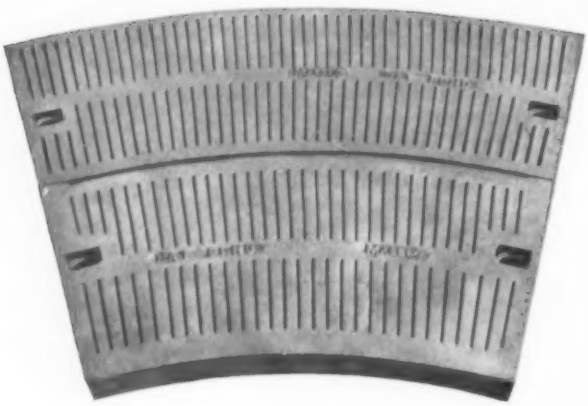
An unusual combination of uniformity and "latitude" is provided by ULTROX "Standard" Zirconium Opacifier because its particle size range is rigidly controlled and tailored to give excellent performance in colored glazes. Covering power is developed with maximum opacifier economy, while less stain is needed to obtain color strength. Glazes made with ULTROX "Standard" also tolerate minor variations in plant production techniques—maintaining uniform opacity and shade. This *production latitude*, another result of optimum-particle-size control, is particularly important in assuring uniform product quality in day-to-day production of glazed structural tile, glazed brick and similar ceramic products.

For strong whites or "fussy" pastels, ULTROX 500W is recommended—and, when needed, ULTROX 1000W delivers the maximum in white reflectance.

M&T Chemicals

METAL & THERMIT CORPORATION
Rahway, New Jersey
In Canada: M&T Products of Canada Ltd., Rexdale, Ont.

Circle Service No. 42



MALLIX SCREEN PLATES

now standard with all leading dry pan manufacturers

The five major dry pan producers supply Mallix Screen Plates as original equipment — assuring you of maximum service life.

And you won't be risking frequent shutdowns later if you specify Mallix Screen Plates for maintenance-replacement. They outlast, outperform ordinary types because they're extra hard, extra tough to resist breaking even in the most rugged service. Mallix Plates assure fast screening, too, because slots are uniform. Smooth, clean openings assure uniform sizing.

Don't gamble. Follow the lead of the leaders and standardize on Mallix Screen Plates for continuous, uninterrupted production and over-all economy. They're available in nearly all sizes and styles.

Industrial Division

NATIONAL
MALLEABLE AND STEEL
CASTINGS
COMPANY

Cleveland 6, Ohio

AA-9421

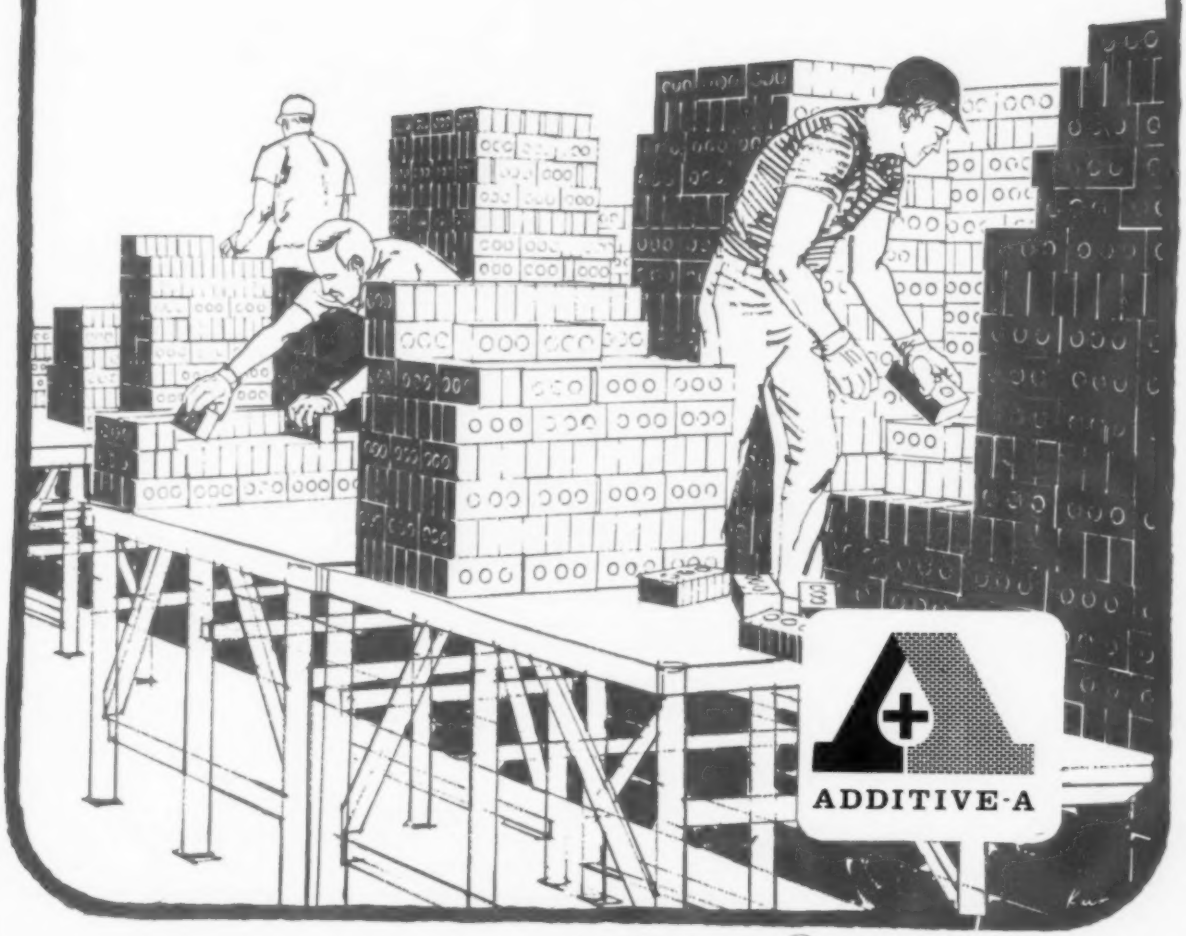
GRATE BARS • PALLET WHEELS • PALLETS • PALLET SIDE PLATES • PUG MILL BLADES

Circle Service No. 43

ADDITIVE-A INCREASES SALEABLE BRICK PRODUCTION FOR ACME BRICK COMPANY

FT. WORTH, TEXAS—Acme Brick Company, with 19 plants throughout Texas, Oklahoma, Arkansas, Louisiana and Kansas, is an enthusiastic user of Additive-A clay conditioner. Acme's director of plants, Mr. Joe P. Hobson, says: "We have obtained favorable results from the use of Additive-A in several of our plants in Texas, Kansas and Oklahoma. We feel that its use has materially aided our drying process, resulting in increased saleable production."

For descriptive folder on Additive-A, write to: Chemical Products, Department No. BCR-41, Kimberly-Clark Corporation, Neenah, Wisconsin



Kimberly-Clark Corporation Contributing Associate S C P I

Circle Service No. 44

At Clay City Pipe Company, Uhrichsville, Ohio, plant labor, using plant equipment, mixed and placed tops for 5 cars in 4 hours, with refractory concrete made with LUMNITE calcium-aluminate cement.

Refractory concrete car tops place easier...cost less...last longer

Cast in place or precast, car tops of refractory concrete made with LUMNITE calcium-aluminate cement offer both longer service and economy.

Refractory concrete tops resist the soaking heat of kilns with little or no spalling or cracking, and the concrete's low volume change means that tops stay level, minimizing car wrecks.

Installation can be just as easy as shown above, and economical as well, since plant labor and equipment can be used. After placing, concrete reaches service strength within 24 hours. For extra convenience, castables containing LUMNITE cement are available from leading manufacturers of refractories. These packaged mixtures are ready for use with just the addition of water and mixing. For more information, write Universal Atlas Cement, 100 Park Avenue, New York 17, New York.

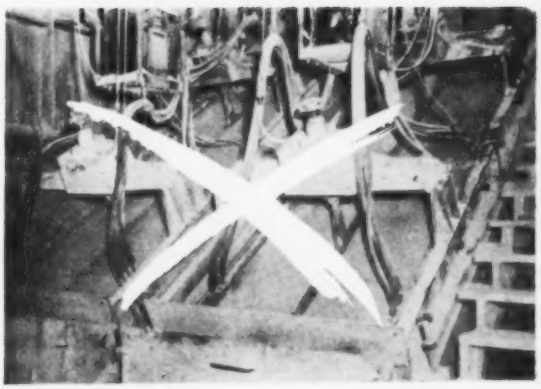
"USS," "Atlas" and "Lumnite" are registered trademarks L-211

Universal Atlas Cement
Division of
United States Steel

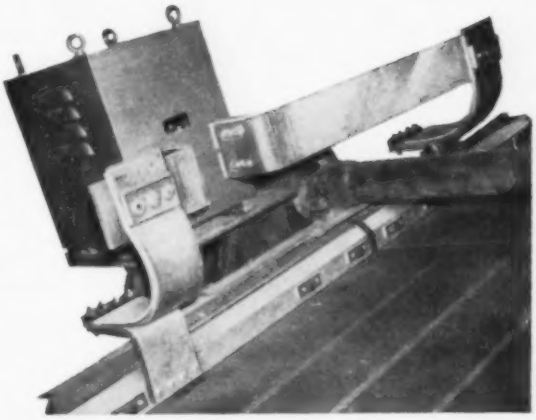
Offices: Albany · Birmingham · Boston · Chicago · Dayton · Kansas City · Milwaukee · Minneapolis · New York · Philadelphia · Pittsburgh · St. Louis · Waco

Circle Service No. 45

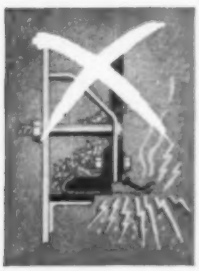
REPLACE CRUDE, CLUMSY and OLD SCREEN HEATING



WITH NEAT, MODERN CONVERTA-SCREEN ATTACHMENTS

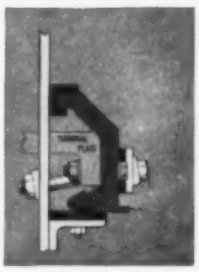


NO MORE HOLES BURNED IN SCREEN CLOTH
NO TRAMP IRON ATTRACTED TO SIDE RAILS



OLD 'BLACKSMITH TYPE'
IRON SIDE RAIL

NEW
NON-FERROUS SIDE RAIL BY CONVERTA-SCREEN

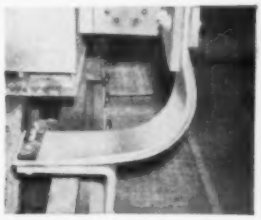


NEW INSULATING METHOD CUTS UPKEEP 50%

CONVERTA-SCREEN modifies only one side of your vibrator with new tensioning rail. Our insulation has high resistance to heat and abrasion, low moisture absorption.

STOPS LEAKAGE OF COARSE material into fines . . . that's the beauty of **CONVERTA-SCREEN'S** exclusive molded rubber panel seal.

EXTRUDED PROFILE-MATCHED PARTS WITH MODERN SHUNTS DO A NEAT JOB



Top efficiency flexible conductors of laminated aluminum with **SPRING ACTION** respond to vibrator motion, put no drag on finely balanced assembly, last longer than stranded or braided cables.

WE *UNCONDITIONALLY* GUARANTEE TO SOLVE YOUR DAMP SCREENING PROBLEM

When moisture makes trouble, tell us what screening equipment you have . . . and we will show you how custom built CONVERTA-SCREEN ends worry and waste motion. This modern low-voltage electric heating protects expensive screen cloth, prevents slow-downs or interruptions, heats any or all decks at a cost of about 15¢ an hour. FREE 30 DAY TRIAL in your plant. Write or call now.

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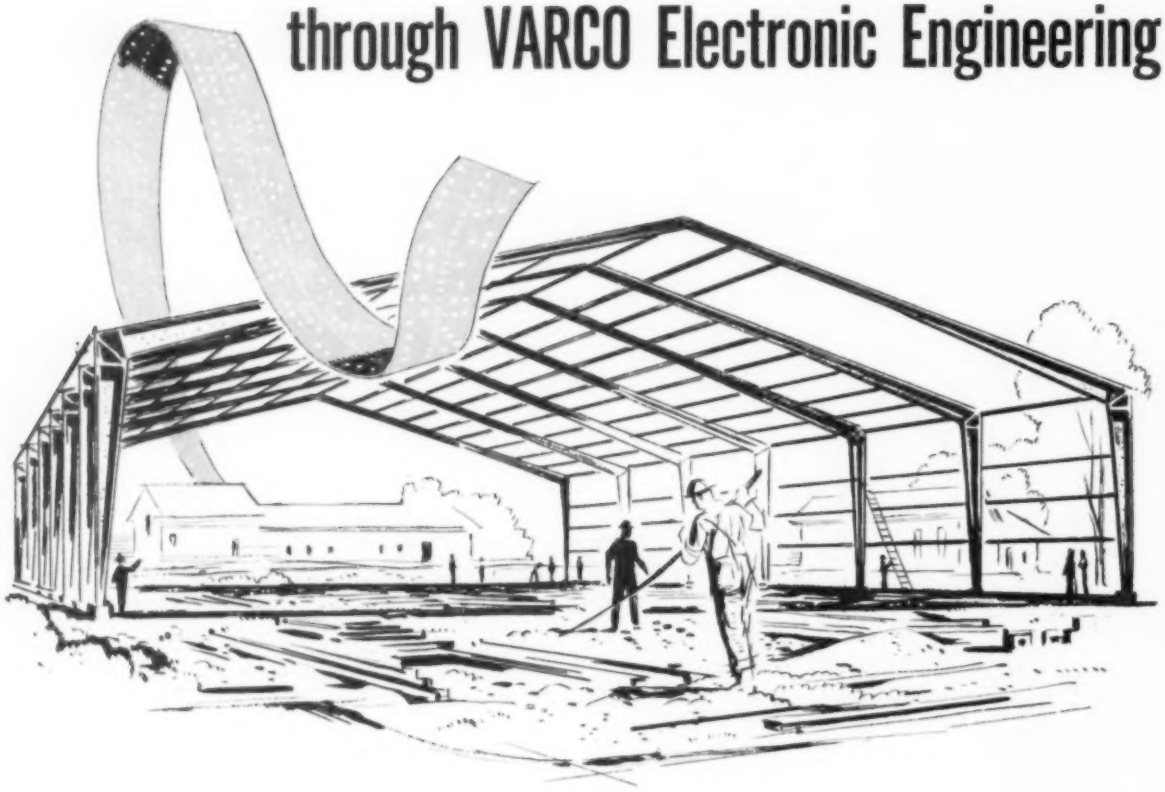
Telephones TE 3-8624, 3-8548

Circle Service No. 46

Better Buildings . . . Faster . . . at Lower Cost through VARCO Electronic Engineering



Varco—the company that specializes in strong, all-welded Uniframe Buildings for the brick and clay industry—now offers you the advantages of **electronic engineering.**

Through use of an Electronic Computer, the time-lag between improved building design and manufacture has been cut drastically. You can be assured your Varco Uniframe Building will contain the latest innovations in steel frame construction.

Whether Clay Storage, Kiln Buildings, Brick Shelters or any other special structure, it can now be engineered in a fraction of conventional time. With infallible data furnished by the computer, eight hour problems are solved in as little as eight minutes. Such advanced engineering techniques save you time and money.

Write for the complete story. Find out why the brick and clay industry is erecting more Varco Buildings than any other type.

Varco . . . now more than ever . . . the better building for less.

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- Cros-Flo Tunnel Kiln
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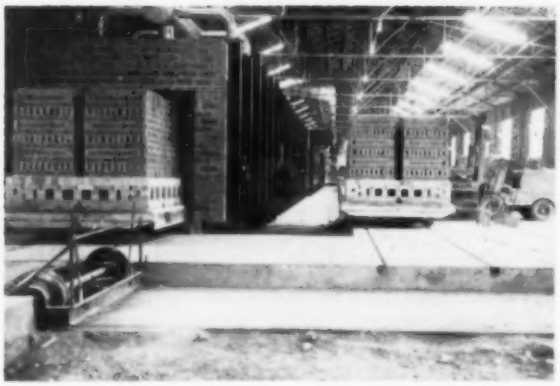
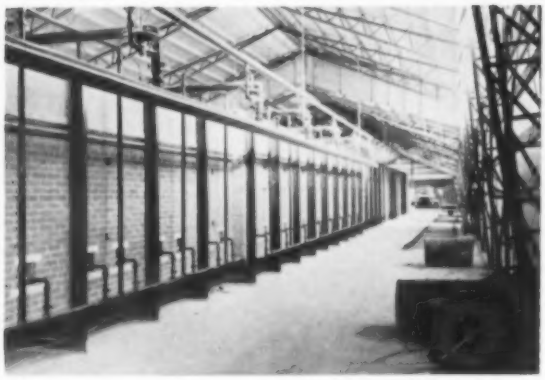
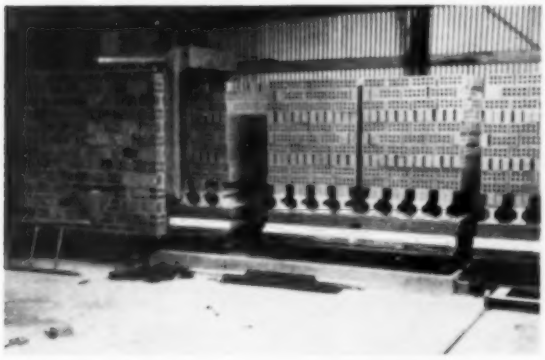
Los Angeles 32, California

Circle Service No. 48







HERE ARE THE FACTS:

OHIO TUNNEL KILNS are the best suited to YOUR PLANT! They are made for all types of ware and both the largest and smallest sized production.

OHIO TUNNEL KILNS produce the most UNIFORM BURNING and even colors with the least possible loss!

OHIO TUNNEL KILNS cost less installed in your plant for they are produced in volume at a minimum cost, all the material is fabricated in our own shop and erected by our own crews!

OHIO TUNNEL KILNS will fit your operation and pocketbook! All of the exclusive features are yours at no extra cost.

NOW AVAILABLE!

The fully automatic OHIO CONTROL SYSTEM is now available for programmed control of periodic kilns and performs equally as well as on our tunnel kilns. It is now being installed on existing round down-draft, shuttle, laboratory and other periodics suited to programmed firing.

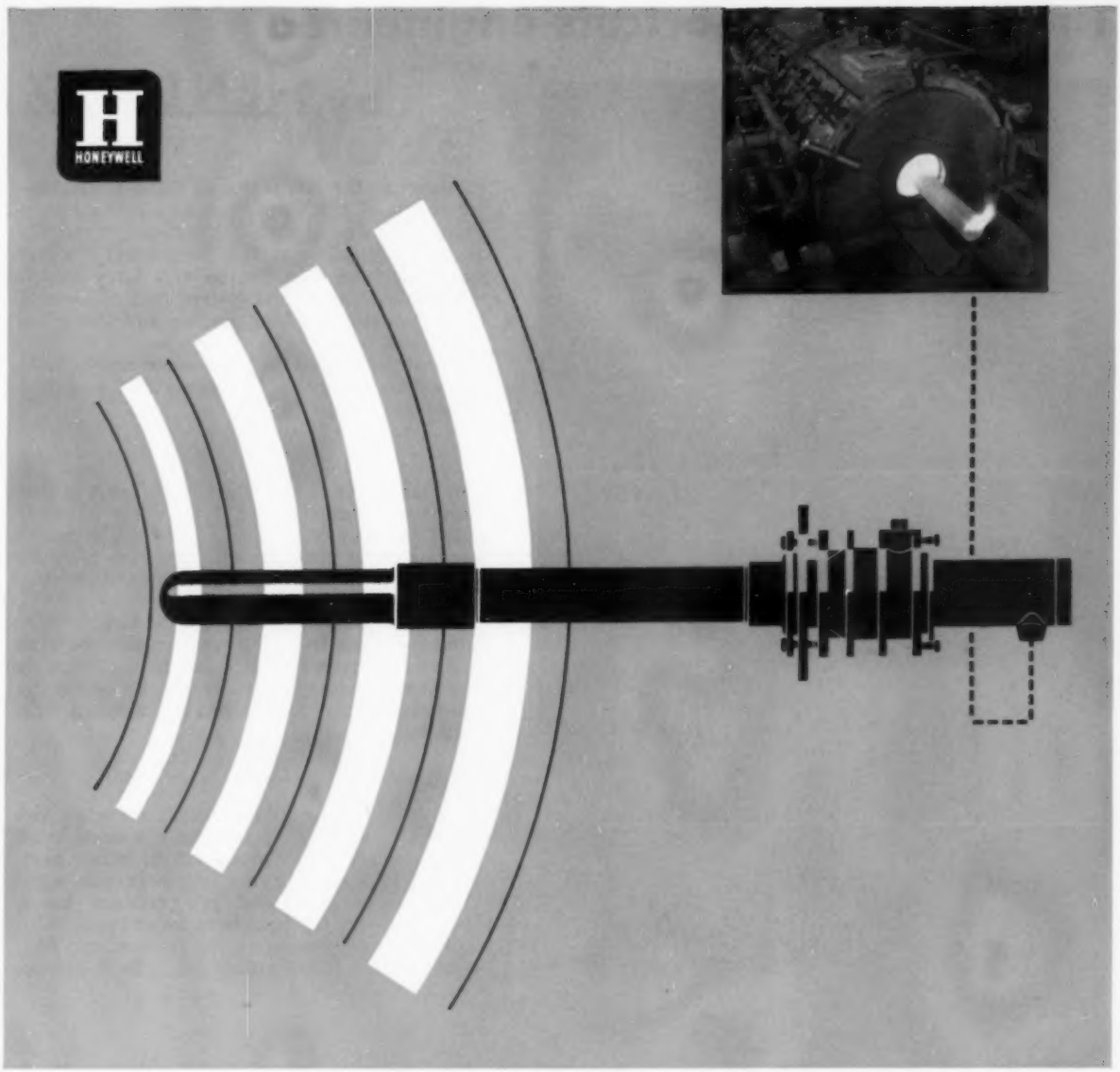
The system is fully automatic and is designed to control the firing from initial light-up through peak temperature and turn down. It will faithfully follow any firing furve you may require.

This OHIO CONTROL SYSTEM is completely assembled in our shops and shipped to you ready to place in operation.

***VISITORS** are always welcome at our shop and when you are close to central Ohio we would appreciate your stopping in. We will be glad to arrange to have you visit both "in-operation" and "under-construction" installations.*

OHIO KILNS
GRANVILLE, OHIO • JU 2-2571

Circle Service No. 49



Specify Radiamatic Infrared Detection Systems for dependable, economical temperature measurement and control

For more than 20 years, Radiamatic Infrared Systems have been giving reliable, accurate service in every area of industrial temperature measurement and control. Over the years, Honeywell has developed special infrared techniques and equipment for a wide range of applications, including soaking pits, kilns, heat treating, induction and forging furnaces.

The key to the high accuracy and low cost of these systems is the Radiamatic Infrared Detector. Available in many different models with a full line of accessories, these detectors measure temperatures from 200°F. up to 7000°F.

For complete information on how Radiamatic Infrared Systems can solve your temperature measurement and control problems, call your nearby Honeywell field engineer. Or write Minneapolis-Honeywell, Wayne and Windrim Aves., Philadelphia 44, Pa. In Canada, Honeywell Controls, Ltd., Toronto 17, Ontario.

Honeywell

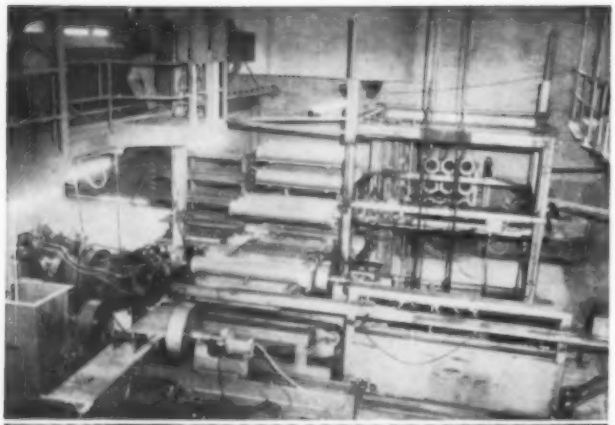
H First in Control SINCE 1906

HONEYWELL INTERNATIONAL Sales and Service offices in all principal cities of the world. Manufacturing in United States, United Kingdom, Canada, Netherlands, Germany, France, Japan.

Circle Service No. 50

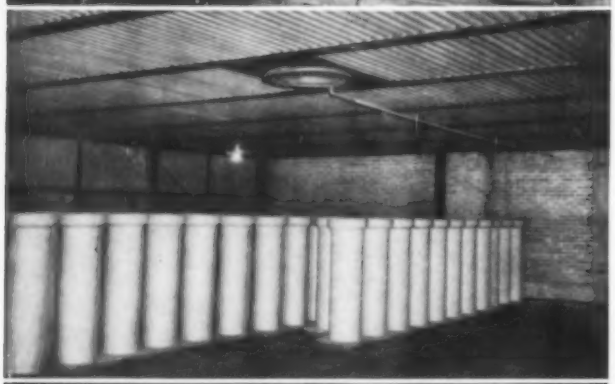
Time and cost shortcuts engineered

by HENDRYX



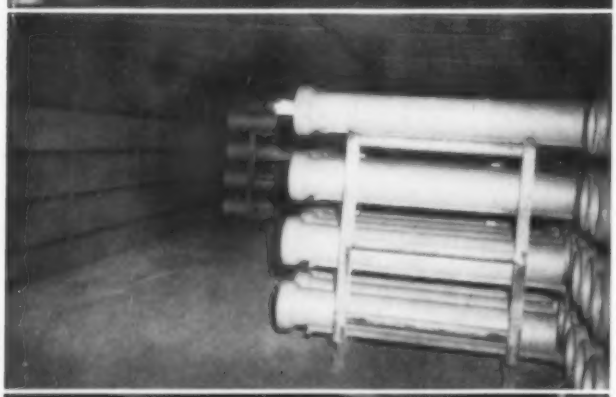
Pictured at the left is one of the manufacturing rooms of the Cannelton (Indiana) Sewer Pipe Company, designed by Hendryx. In sequence, beginning at the foreground are the auger machine and Pearne and Lacy equipment consisting of the former and off-bearer, the automatic finishing station and the automatic rack loader.

Hendryx designs for time, space and operating cost economy, at the same time stepping up production quality.

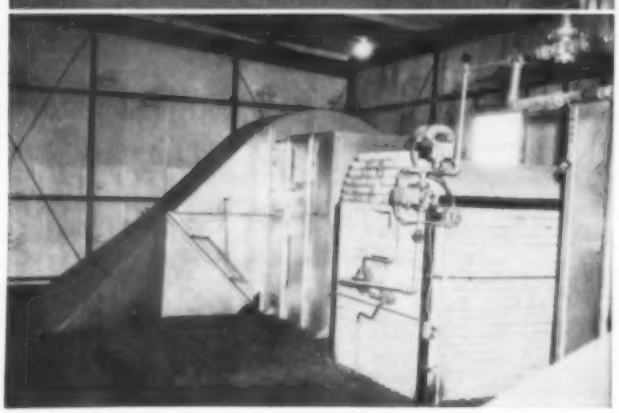


Ten inch sewer pipe is dried in 20 hours in this Hendryx-designed batch type dryer as compared to days or weeks in older style operations. Drying time for all pipe sizes may be anticipated at about one-sixth that of conventional practices.

For vertical drying the forced hot recirculated air flows from the steel grating floor to ports in the oven roof. The center circular vent bleeds off a controlled volume to maintain the desired humidity and permit replacement with fresh hot dry air.



Horizontal drying is faster due to freer air circulation. Four to 8″ pipe sizes are dried in 14 hours. Combination rooms afford either horizontal or vertical drying. Ports in side walls are opened and roof and floor ports are closed. Horizontal drying requires racks and rack loading equipment as seen in top picture, and P&L automatic rack unloaders can afford further savings.



Each drying room is equipped with a gas-fired, heavy duty air-heater supplying two mixing chambers and two fans. Makeup air is constantly proportioned and introduced at the mixers to maintain adequate moisture pickup capacity.

Hendryx engineering for ceramic manufacture can provide you with a complete new plant or a single installation such as drying oven and handling equipment. Hendryx developments and design are proven cost and time savers. Your inquiry for ceramic plant or facility modernization is invited.

DWIGHT B. HENDRYX AND ASSOCIATES, INC.
6621 Darlington Road
PITTSBURGH 17, PA.

Eastern representative for Pearne and Lacy Machine Co., Inc.

Circle Service No. 51

We're on our way!

SEE YOU AT THE CONVENTION

JOHN R. McLAREN N. T. MORRISON ROBERT W. ROFF

BELL OPERATIONS

Making Extra Dollars for Ceramic Customers—Since 1931

BELL MINERALS
Feldspar
W. Paris, Me.

BELL CLAY
Ball Clays
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BELL RESEARCH INC.
Cones, Plaques & Keys
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SOUTHWESTERN TALC
Blen-Tex
Gleason, Tenn.

Circle Service No. 52

HYSTER

Monomast high visibility upright—a Hyster exclusive.

Now! monotrol on Pneumatics—

Only HYSTER® has it!

EXCLUSIVE MONOTROL CONTROL SYSTEM—Performance proved on Hyster cushion tire trucks—now available on pneumatics — 3,000, 4,000, 5,000 lbs. capacity.

SAFE, FAST HANDLING—Driver's right foot controls acceleration—forward-reverse. Left foot controls *braking*—truck *inching*. Hands free for full-time steering and load control.

EASIEST TRUCKS TO DRIVE—Monotrol with Hystamatic transmission means more production per manhour—reduced driver fatigue.

CALL your Hyster dealer for a demonstration.

INDUSTRIAL TRUCK DIVISION—Lift trucks, mobile cranes, straddle carriers
TRACTOR EQUIPMENT DIVISION—Construction and logging equipment
MARTIN TRAILER DIVISION—Heavy machinery hauling trailers
INTERNATIONAL DIVISION—Overseas manufacturing, sales and service
Manufactured in: Portland, Oregon (Home Office) • Danville, Ill. • Peoria, Ill. • Kewanee, Ill.
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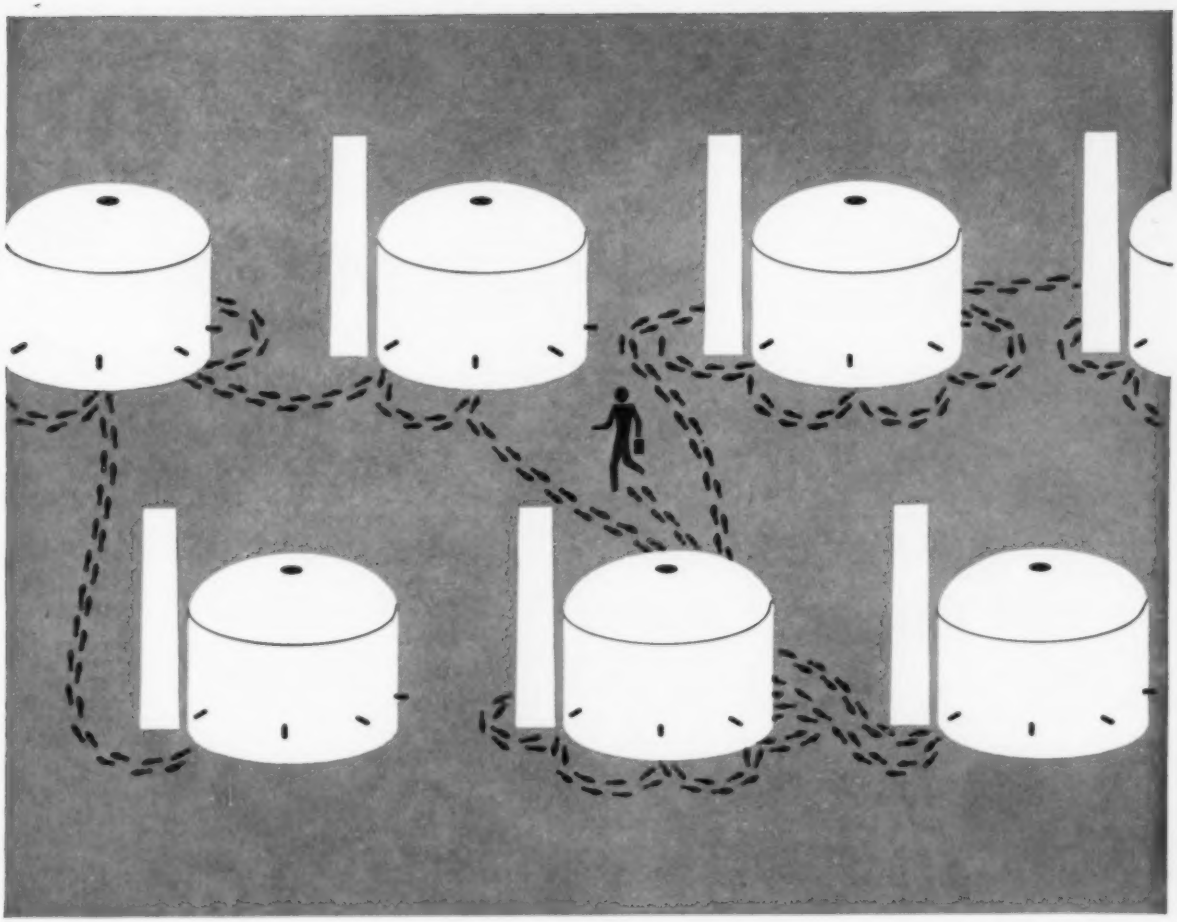
HYSTER COMPANY
INDUSTRIAL TRUCK DIVISION
P. O. Box 847 • Danville, Illinois

Circle Service No. 57



Is your fireman wasting money . . .

walking in "periodic" circles?

Even your *best* fireman can waste money for you! Walking from kiln to kiln, burner to burner, opening fuel valves "a hair", closing them "a notch"—overshooting time-temperature curves, undershooting, cycling—that's waste: wasted btu's, fuel, footsteps, time and labor!

But now, with a moderately priced L&N Automatic Cam-type Program Controller, you can eliminate this waste. Just load your kiln, "mud" it up, start the cam . . . then let this efficient temperature controller take over.

Completely unattended—with built-in "fail-safe" devices that assure safe firing under all conditions—the equipment will give you steady, even heat . . . increased at any rate you desire. Its smooth-working, cam-action drive faithfully repeats a wide variety of firing cycles—again and again.

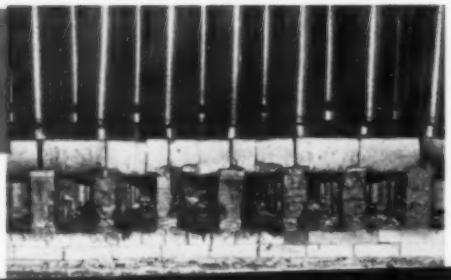
With an L&N Automatic Controller, you not only eliminate manual burner adjustments, you also get closer temperature control; faster, more frequent burns; lower cost per burn; fewer rejects through more-uniform temperatures.

Today . . . find out how an L&N Program Controller can be a profitable investment for *your* periodic kiln. Write Leeds & Northrup Company, 4964 Stenton Ave., Philadelphia 44, Pa. for literature.

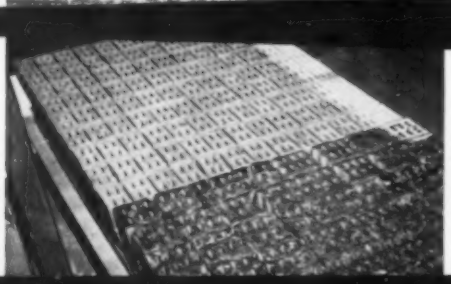
LEEDS & NORTHRUP *Pioneers in Precision*

Circle Service No. 53

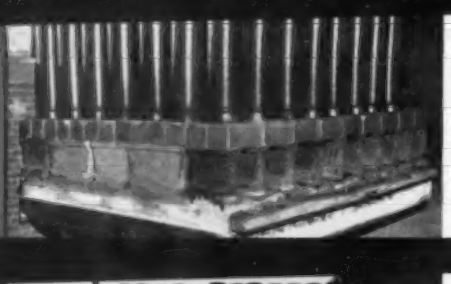
5 times the service life from Remmey SKC car blocks



Cartop design used by Pomona Terra Cotta prior to adopting the design of SKC girders and SKC cartop blocks recommended by Remmey. This design provided an average of 3 to 4 months service.



A car of old type cartop blocks (foreground) and a car of SKC cartop blocks (background) after both had been through the kiln a similar number of times.



Many types of refractory girders were tried on the ends nearest the burner but the additional cost was not justified and Pomona has now standardized on SKC girders.

A new car at Pomona Terra Cotta showing their standardized design using SKC girders and SKC cartop blocks. A good solid design that gives as much as 5 times the service formerly obtained.

Pomona Terra Cotta Co., Gulf, North Carolina reports that prior to their usage of SKC Car Blocks, the maximum service they had ever obtained was 4 months. Failure was due to very bad cracking resulting in car wrecks, shut downs and damaged sewer tile. SKC Car Blocks average 18 months service—as much as 5 times the life of competitive clay blocks.

Cut your production costs... Write or call

A. P. Green REFRACTORY PRODUCTS

A. P. GREEN FIRE BRICK COMPANY

MEXICO, MISSOURI

Manufactured in Philadelphia by

THE REMMEY DIVISION

In Canada, A. P. Green Fire Brick Co., Ltd., Weston, Ontario

Circle Service No. 55

$2 Million for Promotion

There is no quarrel with the high cost of brick panels supplied as samples to dealers, architects, contractors and others interested in using brick. However, it would be ideal if this investment in panels could do double duty.

The usual procedure in panel distribution is to manufacture it at the brick plant and supply it to the dealer. The dealer, in turn, shows it to the architect or other buyer of brick. Usually, the panel is left at the architect's or contractor's office.

The cost per panel varies with quality and the area in which it is made. One plant just told us it spends over $25,000 per year on panels. Another said it approaches the $25,000 figure. A close calculation indicates that between $1.25 and $1.5 million are spent on panels each year by this industry.

Let's turn this expenditure into a plus by cooperating with the dealer. A charge of $5 could be made for each panel ordered by the dealer. The $5 would not be collected as an actual fee, but would have to be spent by the dealer on local advertising. As an incentive, the manufacturer would match each $5 with an additional $2. It means that for every panel delivered, $7 would be spent on local advertising.

This is not a new idea. The Glass Container Manufacturers Institute, in promoting nonreturnable beer bottles, made a similiar offer. Each brewery using the bottles was given 40 cents per gross of bottles for local promotion. The brewery, however, had to match that sum with its own 40 cents. The result was 80 cents in promotion for each gross of nonreturnable bottles used. The plan was extremely successful, as many of you have no doubt noted in watching TV.

Here is an opportunity for about a $2 million promotion effort for brick on the local level.

J. J. Smee

Editor & Publisher

NEWS OF THE INDUSTRY

Structural Clay Shows the Way

Amid all the gloom and doom talk of recession, spearheaded by the administration in Washington, it is refreshing and gratifying to note in the news columns of this issue of BRICK & CLAY RECORD the many stories relating to capital expansion in the structural clay products industry. New construction, equipment and recalls of employees to jobs all add up to confidence in the present and future of the great American economy.

Beyond this, it gives all of us in this industry a pride in belonging, an inescapable feeling that through intensive research and aggressive merchandising structural clay products are on the threshold of new standards of achievement and consumer acceptance. We are meeting the challenge of the times and the competition and we shall all prosper because of it.

New Straitsville Brick Plant Recalls 45

The New Straitsville Brick Co., New Straitsville, O., has announced it will recall 45 of its regular employes back to work. The plant makes flue liners and Ceramiduct for use in basementless buildings. The employes have been notified that the work will last at least until next fall.

Ross Clay To Resume Operations, Recall 120

The Ross Clay Products Co., announced recently that its plant at Seventeen, O., which has not operated for the past several weeks, has resumed operations in all departments. The plant normally employs 120.

President's Housing Message Offers Bright Outlook

The outlook contained in President Kennedy's housing message has the assumption that the suburban boom is over, and that it is now the time for city construction. Many of the plans set forth by the President's message call for increased financial aid to housing programs concentrated in the cities.

Announce Merger Of Acme Brick and Fraser Brick

Acme Brick Co., Houston, Texas, southwest clay products firm has become the owner of the Fraser Brick and Tile Co., of Sequin and San Antonio, Tex.

The transaction included outright purchase of all company assets and liabilities for $1,000,000.

Plan Expansion of Canadian Clay Plant

Saskatchewan Clay Products has started a $160,000 modification and expansion program at its Estevan, Sask. plant. Expansion, combined with recent discovery of new clay deposits, will make possible production of additional colors and types of brick. The plant's capacity will be increased 10%.

Building Trade Pickup Seen By Alliance Clay President

With the weather termed the major villain in 1960, president James Wilcox of the Alliance Clay Products Co., Alliance, O., has prophesied a pickup in the building trade and company prospects in 1961.

Wilcox made his forecast at the annual stockholders meeting of the company held recently.

Acme Brick Dedicates Arkansas Plant

High management officials of the Acme Brick Co., Fort Worth, Tex., were present at the recent dedication of a $500,000 addition to the firm's plant in Malvern, Ark.

Ava Brick Receives Loan

The Small Business Administration has approved a $250,000 loan for the Ava Brick Corp., Ava, O., it was disclosed recently.

David M. Crawford, plant owner, declared the money will not be used for expansion.

Ava Brick has been shut down since early January. It was stated that full production should be resumed soon. The firm employs 60 persons at full capacity, and it is expected that they all will be called back to work.

Industry Will Reopen Plant at Coffeyville

It was recently announced that the Coffeyville plant of the United Brick Division of the American Marietta Co., Kansas City, Mo., will be conditioned for production. About 30 former employes will be given first preference for rehiring.

Brick Making Permit Proposal Will Be Heard

Public hearing on a proposal to permit manufacture of brick, tile and terra cotta products in heavy industrial zones was heard recently by the Greensboro, N.C. Planning Board.

New Olin Process Uses Clay as Aluminum Source

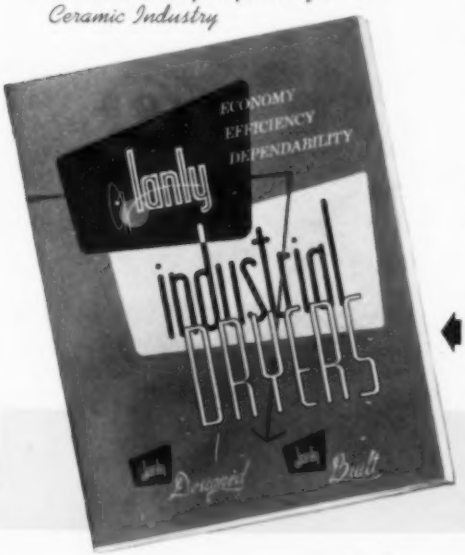
Olin Mathieson Chemical Corp., New Haven, Conn., the nation's fourth largest aluminum producer, recently announced it had made an important breakthrough in developing a commercially practicable way to make aluminum from common clay.

Dr. W. E. Hanford, Olin vice president in charge of research, said the company has developed through the pilot plant stage an economical method of purifying aluminum sulfate extracted by an acid process from clay

(*Continued on page* 58)

This 2 Pass LANLY Conveyorized Oven Cures Plastisol Joints on

Heat Processing Engineers for the Ceramic Industry



The plastic material is applied to the preheated pipe after it leaves the first pass of the oven and is cured in the second pass.

The rapidly expanding production of vitrified pipe with plastisol joints is being greatly expedited by the installation of LANLY ovens in various plants throughout the country manufacturing this product.

NEW BULLETIN 572
Covering Refractory, Sanitary Ware and Vari-Purpose Dryers is yours for the asking.

Manufacturers Using LANLY Equipment for Preheating Clay Pipe and Curing Plastisol Pipe Joint Compound.

American Vitrified Products Co. • Clay City Pipe Co. • W. S. Dickey Clay Co. • Gladding, McBean & Co.
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Pittsburgh, Pa. • Rochester, N. Y. • San Francisco, Calif. • St. Louis, Mo.

Circle Service No. 54

(*Continued from page 56*)

and shales. The aluminum sulfate then can be processed into alumina, the basic raw material for the manufacture of aluminum.

Jackson Firm Takes Over McArthur Brick

James W. Wells, company president announced recently that the Jackson Sand Mining Co., Jackson, O. has assumed complete responsibility for the operation of the McArthur, O., plant of the McArthur Brick Co. The take over became effective April 1, 1961.

Brick & Tile Company Expands

Eugene Long, president of the Georgia-Carolina Brick and Tile Co., Augusta, Ga., has announced expansion of the firm's facilities on New Savannah Rd. The expansion, said to cost about $1 million, should be completed by mid-April. The new facility will increase production by 36,000,000 brick units per year, with new lines and colors.

Town Begins Comeback

There is a quiet undercurrent of optimism in Logan, O., that the worst is over and the best is just beginning.

Optimism was buoyed by the announcement that the Natco Corp., building tile plant in nearby Haydenville resumed production recently. It had shut down since last fall, putting 75 workers out of work.

Barton S. Holl Sr., one of Logan's elder statesman and president and general manager of the Logan Clay Products Co., credits hard work and the positive attitude of old-line industries toward new industries as the most important factor in the town's resurgence.

Install Automatic Hacking Machines at Texas Brick Plant

An automatic hacking machine, which will hack 100,000 brick per 8-hour day is now being installed in the Marshall Brick Co., Marshall, Tex. The machine is reported to be able to face-set, cross-set, or set any pattern brick required by an individual plant.

Designer and installer of the machine is Carpenter Engineering Service, Warehouse Point, Conn. The hacking system will enable the company to set its entire day's production with a complement of only four men, two of which will be required to attend the hacking machine.

Dixie Brick Announces $250,000 Expansion Program Started

A $250,000 expansion program now underway at Dixie Brick, Inc., Natchitoches, La., will see the installation of the state's only continuous dry press brick operation and the first multiple continuous dryer.

With a past market of about seven million brick a year. Dixie hopes to up its production to eight million by cutting its losses in broken brick by using the new process.

Endorse Bill To Require Vitrified Clay Pipe

Local industry and labor have backed the efforts of Ohio State Rep. Jess Dempster to require use of vitrified clay sewer pipe for state highway drainage systems.

Dempster, former mayor of Uhrichsville, O., introduced the bill in the Ohio house which would require the state to use only vitrified clay pipe of diameters of not less than four or not more than 36 inches for drainage. The legislator said drainage of mine wastes and other acidic or caustic liquids is a real problem in pollution control and that only vitrified pipe is capable of handling the problem.

Chattahoochee Brick Appoints Vice President

Joe M. Young has been appointed a vice president of the Chattahoochee Brick Co., Atlanta, Ga., according to H. English Robinson, president of the company.

Region 18 SCPI Holds Architect Meetings

Three informational meetings for Architects were held by Region 18 of the Structural Clay Products Institute, February 14-15-16, in Topeka, Kansas; Kansas City, Missouri; and Wichita, Kansas; respectively.

Speakers at each meeting were: James C. Gross, assistant director of engineering & technology, Structural Clay Products Institute, Washington, D. C., whose subject was "The

Advantages of Structural Clay Products Shown on TV

Ted Duke, staff engineer for the Structural Clay Products Institute, appears to be proving that promoting brick and tile in the home can be a pleasure when the potential consumer is Miss Washington, D. C. 1960-61. Duke, who is emphasizing the advantages of structural clay tile sun screens, was a guest on the March 11 television program "Suburbia" on a Washington, D. C. television station. Hostess for the show is Ruth Rea, this year's reigning local beauty queen.

Ultimate Cost of Building Walls"; and Mr. Robert C. Turner, director of the Facing Tile Institute, New York City, N. Y., who discussed facing tile and its use in masonry design.

The meetings were well attended, with 116 present in Topeka, 226 in Kansas City, and 84 in Wichita. The meetings were well received and all people were anxious to receive the "Ultimate Cost of Walls" booklet, of which James C. Gross, is co-author.

At the Kansas City meeting, Don Wilkerson, business agent, Local #4, Kansas City, Missouri, addressed the group. His subject was: "The Necessity of Better Cooperation Between Architects and the Bricklayers Union".

The dynamic film, "Man & Masonry," prepared by the Allied Masonry Council, which tells the architectural story of brick and tile design within the capacity of the motion picture camera, was shown at each meeting.

Structural Tile Made In Canada

National Sewer Pipe Ltd., Oakville, Ont., will manufacture ceramic glazed structural tile and ceramic glazed brick. The line of new products will be of a type and quality not being made at the present in Canada, it was announced by the company.

Announce Mid-Year Meeting

The Expanded Clay & Shale Association, Allentown, Pa., has announced that their mid-year meeting will be held July 20 and 21 at the Americus Hotel, Allentown.

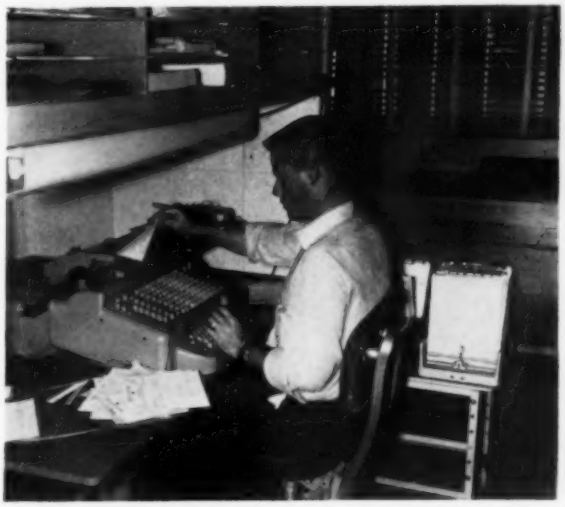
Editors Regret

The editors of this magazine are sorry to report that last month a news item was published that was erroneous. It was reported on page 44 of the March BRICK & CLAY RECORD that Stillwater Clay Products Co., of Dennison, O., discontinued production of clay products. The company is still in operation and the production of clay products is still continuing.

SCPI Appoints John D. Fulton To Public Relations Staff

John D. Fulton has been appointed assistant to the director of public relations of the Structural Clay Products Institute. Fulton, who was formerly on the staff of the *Washington Daily News*, has been a small building materials contractor and also worked in the home building field for a year.

Phoenix Brick Installs Modern Bookkeeping Machine



With the installation of an NCR bookkeeping machine, the Phoenix Brick Yard, Phoenix, Ariz., has been able to do away with night work and constantly increasing costs in record keeping. The noise from the machine was quite a problem until it was decided to construct an anti-sound enclosure for the machine. Because of the anti-sound enclosure it has been possible to keep the machine in the front office.

New York Clay Products Group Given Charter

The National Association of Distributors and Dealers of Structural Clay Products, Washington, D.C., has announced that a charter has been granted to the New York Chapter, made up of the organization's members in the metropolitan area.

Enter Politics, Businessmen Told

Robert A. Finney, secretary and general manager of the Humbolt Brick and Tile Co., Humbolt, Kans., and newly elected member of the Kansas Legislature from Humbolt told shipping industry representatives from two states to take a more active interest in politics for the sake of their business. Finney addressed a luncheon of the Trans-Missouri-Kansas Shipping Board recently in Kansas City.

Gladding, McBean Names New Regional Manager

Wentworth A. Bowman has been named regional manager for Northern California for the Gladding, McBean & Co.'s architectural products division. His responsibilities will include direction of all sales efforts for the firm's ceramic, masonry and tile products as well as corporate administrative duties.

Wellborn Joins Atlas

James M. 'Mac' Wellborn has joined the Atlas Tile & Brick Co., Inc., Jackson, Miss., as general manager.

Announce Robert Osborn Joins Humbolt Brick

The appointment of Robert G. Osborn as assistant general manager of the Humbolt Brick and Tile Co., Humbolt, Kans., was recently announced by Robert A. Finney, general manager.

The Hoverbarrow

Since Britain's original twin-passenger Hovercraft, invented by Christopher Cockerell, went skimming across the Solent on a cushion of air, several large British firms have been working on developments of the idea. For example, the Vickers Group is planning two prototypes of which the larger may carry 200 passengers and 12 cars; a Cushioncraft is being built for Elders and Fyffes to transport bananas on their West African plantations, and the Hawker Siddeley group is developing the Hovertruck. But the smallest version of all is the Hoverbarrow, described by Alan Murray in a recent edition of the BBC Gen-

(Continued on page 60)

(*Continued from page 59*)

eral Overseas Service programme 'New Ideas'.

"It was designed by Mr. Edward Drewery, a building contractor in Kent", said Murray. "He's now using three of them to carry bricks and mortar, timber and tools, across the muddy ground of a new housing estate where his men are working. This strikes me as a really good idea—not only for builders, but for farmers, too. A barrow that needs no muscle power to lift, and no tugging or straining to push or pull, even if it's loaded to its capacity of 300 pounds —though its designer does admit that you have to learn the knack of handling it properly. It's a barrow supported, not by a wheel but by a cushion of air produced by a power-driven fan. It makes for easy going over mud, boulders or unmade roads, and whatever the surface, none of it is blown back on the man at the handles. There's an anti-splash curtain that prevents any mess. The Hoverbarrow is driven by a two-stroke engine. When you throttle it back it sinks gently to the ground. Mr. Drewery is negotiating with a big manufacturer who wants to produce it commercially."

Brick Firm Suffers $25,000 Fire Damage

Approximately $25,000 damage was caused recently by a fire at the Roanoke-Webster Brick Co., Roanoke, Va.

The blaze originated in a storeroom at the rear of the company's office building. It burned out of control for more than an hour before being brought under control by fireman from the surrounding communities.

New Depletion Rules Issued

The Internal Revenue Service has issued, effective January 30, 1961 the ruling 61-17 concerning brick and tile clay depletion allowance.

Included in the ruling is the wording "any process which is not necessary to bring such mineral to shipping form will not be considered an ordinary treatment process".

The SCPI Depletion Committee has inquired at the Internal Revenue Bureau as to how they will interpret the word "shipping form" and while they have not yet received a conclusive reply, it is indicated that "shipping form" is the point at which the clay is extracted from the ground and loaded onto trucks or conveyors to be taken to the plant.

The ruling will probably be used by your local revenue agent in discussing your depletion allowance.

Neill Boldrick, chairman of the SCPI Depletion Committee, has requested that all manufacturers keep him informed of any action taken under the ruling.

Exhibit Facing Tile Promotional Literature

Newly re-elected Mason Contractors Assn. of America President Stephen D. Raimo (center) seems pleased with the Facing Tile Institute's promotional literature being shown by Structural Clay Products Institute Board Chairman Douglas Whitlock (right) and FTI Director Robert C. Turner at the recent MCAA convention in Philadelphia, Pa. Raimo was visiting the FTI and SCPI exhibits at the contractors' annual meeting.

Dickey Elects Four To Executive Posts

The election of four men to executive posts was announced by the W. S. Dickey Clay Manufacturing Co., Kansas City, Mo.

Joe Mason, former secretary for the large clay products firm, has been elected vice president and general sales manager. Mason joined Dickey in 1924 as traffic manager, was named general traffic manager in 1939 and has also served as branch manager and director of labor relations for the firm.

Others elected include: James L. Kilroy, elected manager of the company's Kansas City Unit where he had served as assistant manager; Duane A. Bush, elected secretary; I. Barnett Ellis, elected assistant secretary and assistant treasurer.

Scholarship Increased For 1961 Miss Clayland

An increase in the scholarship fund and a new general chairman will spark the Miss Clayland Pageant, a preliminary to the Miss America contest, which climaxes National Clay Week activities in the twin cities of New Philadelphia and Uhrichsville, O.

The scholarship fund provided in the past by the Clay Sewer Pipe Assn., has been increased by donations from other leading companies in the community.

SUNY College of Ceramics To Build Research Center

The State University of New York, Alfred, N. Y., will build a two-story, air-conditioned research laboratory for graduate students in its College of Ceramics, Dean John F. McMahon announced. Work on the $113,000 masonry structure probably will begin next summer and be completed by January 1, 1962.

Dr. W. H. Lawrence, director of

research, said the basement will contain a machine shop and glass-blowing facilities and the ground floor the laboratories, air-conditioned "because of the character of research to be done." The building will go up behind Binns Merrill Hall, which houses the College of Ceramics on the Alfred University campus.

News Notes

The Atlas Tile and Brick Co., Schuqualak, Miss., has been accepted and welcomed into the Mississippi-Louisiana Brick & Tile Manufacturers Association.

* * *

The Mississippi-Louisiana Brick & Tile Manufacturers Association will hold its fifth annual meeting at the Grand Hotel, Point Clear, Ala., May 19 and 20.

* * *

The Southern Brick & Tile Manufacturers Association has named its new officers for fiscal year 1960-61. The new officers are: President J. D. Henry, Henry Brick Co., Selma, Ala.; 1st Vice president, Joe Patrick, Southern Brick Co., Ninety Six, S. C.; 2nd Vice President, Jim Cooper, Jenkins Brick Co., Montgomery, Ala.; Secretary and Treasurer, Leonard Sterne, Birmingham Clay Products Co., Birmingham, Ala.

Present president Larry Dantzler will turn over the gavel to the new officers on May 1st. To the new slate, much success and the best of luck is the wish from all. . . . .

* * *

Obituaries

Paul V. Robinson

Paul Vincent Robinson, secretary-treasurer of the Robinson Clay Product Co., Akron, O.

Theodore F. Lanning

Theodore F. Lanning, office manager of the Dennison, O., division of the Stillwater Clay Products Corp.

Mrs. Gordon Lewis

Mrs. Eleanor M. Lewis, wife of Gordon Lewis, chief engineer of the Glen-Gery Shale Brick Corp., Wyomissing, O.

Solution Near on Efflorescence Research

Stanford Research expert L. P. Berriman scrapes off efflorescence from a test brick wall. Substance was identified as soluble alkali sulfates, of sodium and potassium.

A solution to the problem of efflorescence in brick may be near as the result of a research project being carried on at the Southern California Laboratories of the Stanford Research Institute.

The solution, when finally achieved in full form, will do much to eliminate the minor but nagging headache which plagues architects and builders who wish to specify the use of brick in new construction where the brick may be left exposed.

Brick, it has been emphasized by Stanford research experts L. P. Berriman and D. W. Bolme, "is one of the most desirable building materials available, both from aesthetic and structural standpoints."

The Clay Products Promotional Fund of the Brick Institute of California is sponsoring the research in which the Stanford team is attempting to eliminate brick efflorescence.

Identity of Salts

"When we began," Berriman said, "we first determined the identity of the salts deposited by efflorescence on brick masonry work in Southern California. These deposits consisted primarily of alkali surfaces, particularly those of sodium and potassium.

"The major source of the salts," Berriman continued, "was traced to portland cement used in the mortar and grout between the bricks. Several test walls were then built with a low alkali portland cement and various amounts of sodium sulfate were added to the mortar and grout.

"Efflorescence took place in proportion to the amounts of sodium sulfate added, and evaluation of data from these walls," Berriman said, "indicates that as little as one fourth of one per cent of alkali sulfate in portland cement will cause the efflorescence."

Reducing Salt Deposits

The research team then reasoned that salt deposits could be reduced by immobilizing the sulfate ions, by converting them into insoluble forms by the addition of specific chemicals.

This was proven to a limited degree by introducing a chemical compound into the mortar that was used in building the test walls, a process which resulted in considerably reducing the efflorescence.

The researchers then began working toward the development of an additive or a process that will effectively fix or immobilize the sulfate ions and the research is now nearing completion on a combination of additives and processes.

TRADE NEWS

New Manganese Firm Begins El Paso Operation

The American Minerals Co., El Paso, Tex., has announced they have begun operation of their new manganese ore crushing operation in El Paso.

The $250,000 facility will process ore imported from Manganeso Mexicano, S.A., of Mexico. The plant can turn out roughly-ground ore, or ore as fine as face powder and blend ores of different degrees of coarseness.

Location in El Paso will allow the company to use all major Mexican and U.S. transportation routes.

American Nepheline Expands

The annual report of American Nepheline Limited (wholly owned U.S. subsidiary, American Nepheline Corporation, Columbus, O.) has disclosed plans for expansion from the production of nepheline syenite into the broad field of industrial materials. As a starting point shareholders are being asked at the annual meeting to approve a change of name to Industrial Minerals of Canada Limited and recapitalization which involves the present shareholders getting one new share for ten old shares. The new capital will be 1,000,000 shares, of which 410,000 shares only will be issued. There are no present plans to issue additional shares. The report indicates that there will be no change in the personnel involved in the production and selling of nepheline syenite.

Drakenfeld Breaks Ground For New Plant Addition

Ground breaking ceremonies recently took place at the Washington, Pa., plant of the B. F. Drakenfeld & Co., Inc., for the construction of a 24,400 sq. ft. addition. The company earlier this summer completed a warehouse unit of 18,000 sq. ft. and a laboratory expansion unit is being completed at the present time.

Huber Names Vice President

Philip L. Courtney has been named vice president in charge of the clay division of J. M. Huber Corp., which mines and processes kaolin clays in South Carolina and Georgia.

Tyler Awards $5 Million Construction Contract

A contract in excess of $5 million for the construction of a new manufacturing plant for the W. S. Tyler Co., Cleveland, O., has been awarded to the George A. Fuller Co., New York.

Plessinger Named Technical Representative

C. B. Plessinger has joined the National Paint & Manganese Co., a division of the Howe Sound Co., as a technical representative in the Southwest.

Side-O-Matic Unloader Promotes Geubtner

John A. Geubtner, formerly assistant sales manager, has been promoted to sales manager of Side-O-Matic Unloader Corp., York, Pa., a division of York Stone and Supply Co., according to an announcement by Amos Raffensberger, vice president of Side-O-Matic.

W. S. Tyler Appoints Two To New Posts

The W. S. Tyler Co., of Cleveland, O., a major producer of vibrating screen machinery, announces two personnel appointments in its expansion program. The appointments are Walter J. Parks as director of product development—Screening Division and Edgar E. Gardner as chief engineer of the Screening Machinery Division.

Parks will assume the new post as director of product development after serving as chief engineer of the Screening Machinery Division for many years. In this post he was responsible for many significant developments such as the Ty-Rock Screen, the Ty-Lock Rod Deck, the Air Seal Enclosure, and many others. In his new post Mr. Parks will devote full time to design improvement of existing products as well as the development of new products in the screening field.

Gardner, who succeeds Parks as chief engineer of the Screening Machinery Division, steps up from the post of assistant chief engineer of this division, which he has held for the past nine years. Prior to that he was with the Buell Engineering Co. of New York City. Mr. Gardner is an engineering graduate of Yale University.

This expansion of the marketing organization complements the planned growth in facilities in the W. S. Tyler Co. Recently the company announced the awarding of a contract in xecess of $5 million for construction of a new manufacturing plant to be located in the Mentor Industrial Park near Cleveland. The plant, which will have more than one-half million square feet of manufacturing space, will produce heavy gauge wire cloth and vibrating screen machinery for industrial and mining applications.

Hyster Names Two New Vice Presidents

Election of Glenn Herz and James L. Woodley as vice presidents of Hyster Co., Portland, Ore., has been announced by Philip S. Hill, executive vice president.

Herz was named vice president—engineering, and Woodley became vice president—manufacturing. They were elected February 9 by the Hyster Co. board of directors.

Both men are located at Hyster Company's general office in Portland, Ore.

Equipment Firm Doubles Facilities

Production facilities of the Manufacturers Equipment Co., Dayton, O., have been doubled with completion of a new 10,000 sq. ft. building.

Segal Joins Chisholm Boyd & White Sales

Ernest Segal has joined the sales department of Chisholm, Boyd & White Co., Chicago, Ill. He will serve as sales engineer.

SCPRF News

Another example of how the effective use of the "SCR masonry process"* by home builders can increase the sales of brick has come to our attention. A home builder had a large project started in which he was building brick veneer homes—each house requiring 4300 brick. He was introduced to the "process" and his mason crews started using it. Soon his masonry labor costs had been reduced to a point where he was able to add 1700 more brick to each house with only a very small increase over his original over-all masonry cost per home. Because of the size of the project, this increased number of brick used on each house will mean that several million more brick will be sold on the entire project.

* * *

*As part of its program, in cooperation with the Structural Clay Products Institute, to extend and improve the use of the "SCR masonry process" by mason contractors all over the country, SCPRF has developed a new version of the "SCR corner pole"**. A prototype of the new pole design was one of those used at the demonstration before mason contractors attending the recent MCAA Convention in Philadelphia and it received many favorable commendations. SCPRF field men are currently "field testing" the new pole design on a variety of job types, preparatory to its introduction. The new design is all metal with a minimum of fittings and it retains much of the flexibility of use and adjustment typical of the current "SCR corner pole", but with much less bulk and weight.*

* * *

SCPRF has just published a 20 page 4-color "corporate image" brochure describing its research facilities and program. This brochure was written and designed with the idea of telling the structural clay products industry's research story to architects, contractors, builders, etc. In it is presented an image of a modern and progressive industry whose hopes and expectations of a vigorous and dynamic future have as their foundation a strong research and development program.

* * *

The fundamental research program sponsored by SCPRF at Arthur D. Little, Inc., is progressing satisfactorily, although still in the early exploratory stages. This program is aimed primarily at the problem of the durability of dense surfaced and glazed ceramic wares.

* * *

With the coming of Spring and building construction activity increasing, requests from mason contractors for assistance with the "SCR masonry process"* are beginning to increase also. Contractors faced with increased wage scales are realizing that only with such improved masonry building techniques as the "process" can they keep themselves in a favorable competitive position.

* * *

Lightweight dry press 8″ x 8″ x 16″ clay block have been produced on an experimental basis by SCPRF with weight reductions of over 40%, strengths in excess of 1000 psi and with minimum size variations, sharp clean edges and surfaces that can either be glazed or left unglazed. These units are definitely of facing material quality in every respect.

* * *

A recent issue of a national magazine in the home building industry contained an article on the need for more research in the housing field. In discussing what the several important segments of the housing industry could do in the area of research, the editor commented:

> "If you are a manufacturer . . . . . you can support the research program that your trade association is undertaking. Companies too small to support their own research can accomplish a great deal this way. A shining example is the brick industry, whose Structural Clay Products Research Foundation has done a tremendous job producing materials and methods to keep the cost of brick construction at a highly competitive level."

Along these same lines, William H. "Bill" Scheick, executive director of the American Institute of Architects recently said:

> "The value of . . . . . (any association) lies in its ability to do for its members what they cannot do for themselves individually . . . . . in the summation of knowledge gained from their total experience."

* * *

SCPRF's cooperative program with Dow Chemical Company on the development of a high-bond mortar is progressing on schedule. Structural testing at the Geneva Research Center continues to confirm the 4 to 5 fold increase in bond strength developed by this mortar. Work is also being carried on in connection with improving the mortar's workability, while at Dow, full scale weathering and durability tests are underway.

* * *

Region 6 of SCPI (Iowa, Minnesota, Nebraska and North and South Dakota), under the direction of Regional Director Jim Neville, is using research developments as the overall theme for a series of six full

page ads to be run in regional architectural and engineering magazines during 1961. An example of the ad is shown above. Here is an excellent example of putting research results to work as sales or promotional tools.

* * *

*Reg. T.M., Pat. Pend., SCPRF
**Reg. U.S. Pat. Off, Pat Pend, SCPRF

News of Refractories

A. P. Green Announces Branch Manager

The A. P. Green Fire Brick Co., Mexico, Mo., recently announced the appointment of Jack Q. Lewis as manager of its Birmingham, Ala., branch.

North American Begins Production at New Plant

The North American Refractories Co. recently announced they will produce a new high quality basic refractory at their modern plant at Womelsdorf, Pa. The new full line of basic refractories will be known under the trade name of NARMAG. The new plant is located so as to afford the best possible means of transportation for the plant's products, easy access to all types of transportation will assure rapid delivery to any consuming plant.

Announce New Sales Manager For Davis Fire Brick

Thomas F. Gallagher has been named general sales manager of the Davis Fire Brick Co., Oak Hill, O., it has been announced by J. L. Cummings, vice president. Gallagher will also act in this capacity for the other companies associated with Davis—The Sivad Ceramic Corp., The Ohio Fire Brick Co., and the Cambria Clay Products Co.

Thomas F. Gallagher

Babcock & Wilcox Signs Technical Agreement

The Babcock & Wilcox Co., New York, N. Y., has signed a technical agreement with Isolite Insulating Products Co., Ltd., Osaka, Japan, it was recently reported by R. A. Barr, vice president in charge of Babcock and Wilcox's Refractories Division.

Under the terms of the agreement B & W will aid in the start-up of manufacturing operations at Isolite's new 215,000 sq. ft. plant in Toyokawa, Japan and will continue to furnish technical assistance on existing and new product developments for the period of the agreement.

Chicago Fire Brick Executive Tours India

George Young, president, Chicago Fire Brick Co., Chicago, Ill., recently toured India. All indications are that an enjoyable time was had.

Blaze Destroys Fire Brick Plant

Fire destroyed the No. 1 plant of the Louisville Firebrick Co., at Grahn, Ky. Kiln fireman Oscar Scott said the loss probably would be in excess of $150,000.

New President Named at American Refractories

Robert M. Terry was named president and treasurer of American Refractories Crucible Corp., North Haven, Conn. He replaces G. T. Hubbell as president and R. W. Brown as treasurer, both of whom resigned. Bernard H. Natthies was elected vice president and George H. Caligan was named vice president in charge of sales.

Denver Fire Clay Elects G. W. Jensen

Gerald W. Jensen, who joined Denver Fire Clay Co., Denver, Colo., as executive vice president last October, has been named president of the company by the board of directors.

Jensen succeeds Richard C. Shepard, who will continue as chairman of the board.

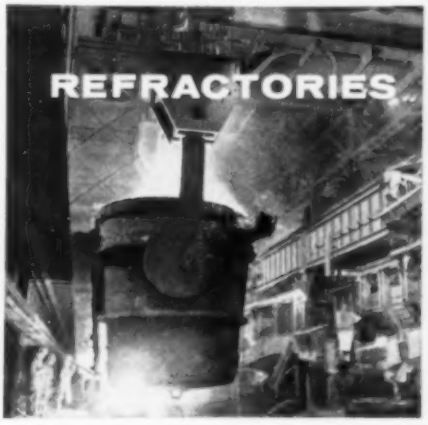
Also elected as officers of the company were James T. Rutherford as vice president of manufacturing and Paul T. Thiel as vice president of sales. J. H. Lentz was named vice president and treasurer.

The company was purchased in October, 1960, by Thermal Ceramics Industries, Inc. A month later Denver Fire Clay purchased Dickinson Kilns Co., a west coast firm producing a complete line of kilns.

Plant Plans Additional Kilns

The Electro Refractories & Abrasives Corp., Buffalo, N. Y., will increase the firing capacity of its Refractories Division this year by building additional kilns, it was recently reported to the firm's stockholders at their recent annual meeting.

Chairman of the Board Grant S. Diamond and President Carl F. Leitten also reported net sales of $6,395,079 for the year ended Dec. 31, compared to sales of $7,122,786 for 1959. Net income was $337,934 or 99 cents per share for 1960 compared to $559,945 or $1.66 per share the previous year.



Two Vice Presidents, Three Managers Named By Corhart

Corhart Refractories Co., Louisville, Ky., has named two vice-presidents and three managers.

The Louisville firm, a wholly owned subsidiary of Corning Glass Works, named Harold W. Baque vice president and assistant to the president and John K. Meyer vice president and general manager.

In addition to the two vice presidents Corhart named three new managers. Edward E. Humphrey was promoted to field sales manager, and Benjamin P. Colosky, who joined Corhart in 1957, was named staff sales manager. At the same time John M. Rauscher was named manager of technical services.

At North American Refractories Company, Curwensville, Pa. Plant . . . .

One man does the work of four with
BOYD SHAPE-O-MATIC

When Shape-O-Matic came in . . . laborious hand molding started its way out at Curwensville.

In addition to producing *four* shapes in the same time it takes to hand mold *one,* this economical, pneumatically powered compacting press now frees North American's Boyd production presses from the die changes necessary for short runs on special shapes.

Quality? North American reports that shapes produced on Shape-O-Matic are comparable in *every way* to dry pressed refractory brick . . . in density, strength and green properties.

Want to cut *your* costs on special shapes . . . yet make better and more stable brick, faster? North American did—so can you!

Write for details on Boyd SHAPE-O-MATIC.

Above:
Jim Heitsenrether stacks radius brick direct to kiln car from Boyd **Shape-O-Matic** at Curwensville, Pa., fire brick plant of North American Refractories Co.

CHISHOLM, BOYD & WHITE COMPANY

SUBSIDIARY OF WEHR STEEL COMPANY

610 W. 57th STREET — CHICAGO 21, ILLINOIS

BOYD
POWER PRESS

1160

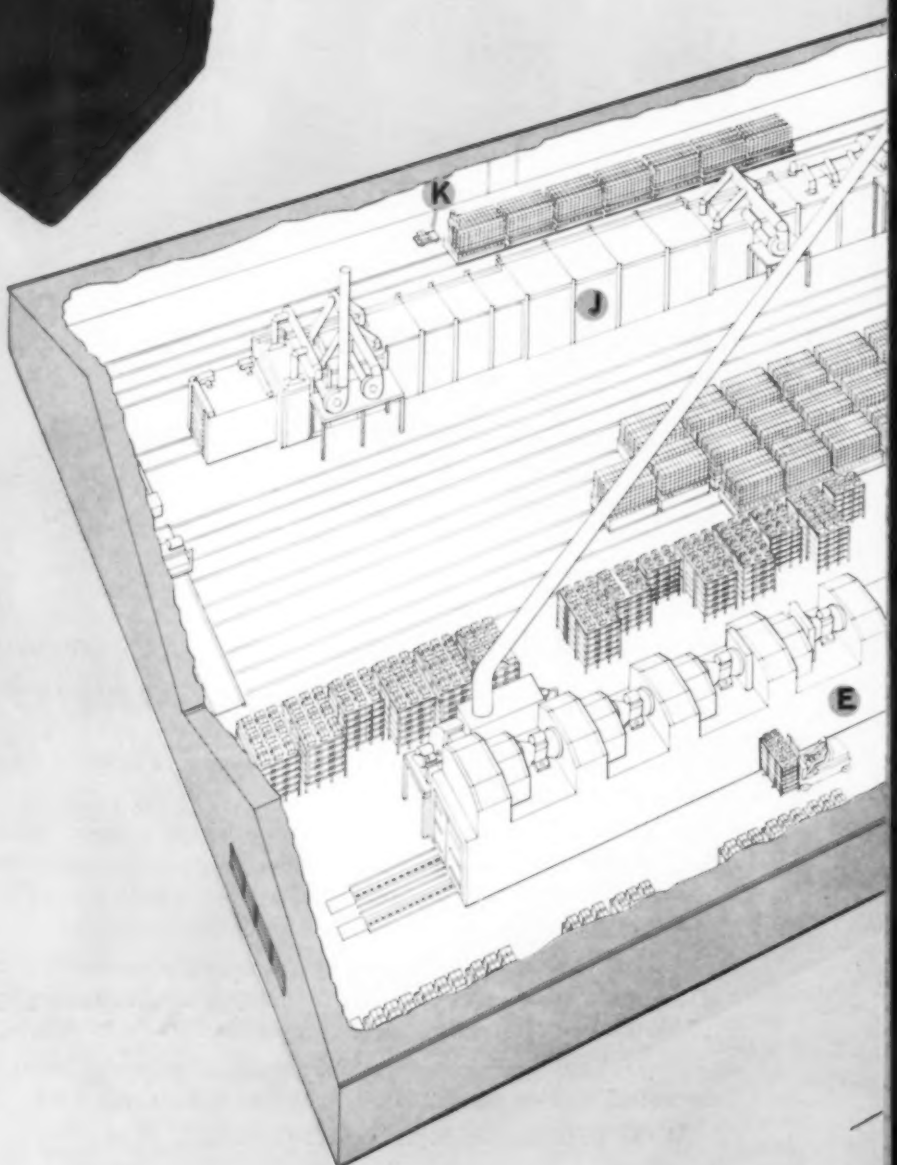
SWINDELL–DRESSLER ENGINEERING

Design and Construction of LIGHTWEIGHT

A Typical Swindell-Dressler Pre-Engineered Plant for Automated Clay Block Production

This concept of an automated plant for the production of lightweight structural clay block is typical of the engineering-in-depth provided by Swindell-Dressler in this important new field. The key elements in the installation are located as follows:

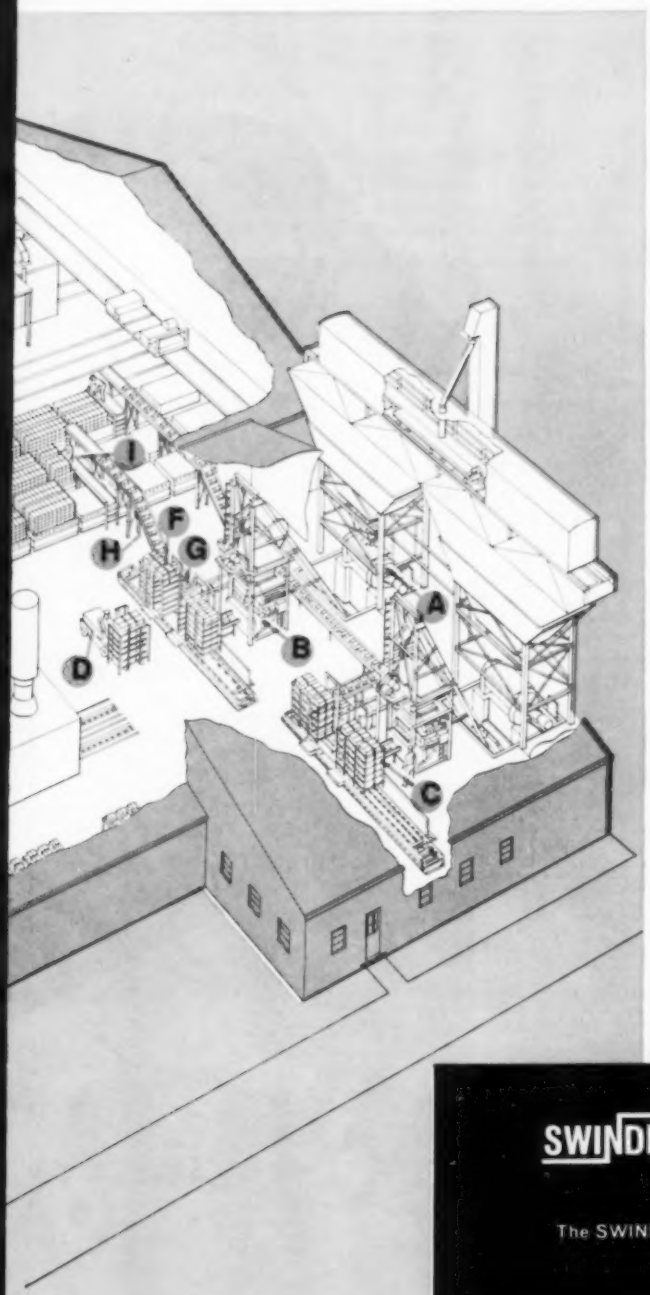
- **A** Batching & Mixing Equipment
- **B** Block Forming Machines
- **C** Automatic Rack Loader
- **D** Fork Lift Operation to Dryer
- **E** Rack-Type Clay Block Dryer
- **F** Automatic Rack Unloader
- **G** Pallet Stripping Mechanism
- **H** Conveyor to Hacking Station
- **I** Hacking to Kiln Cars
- **J** Tunnel Kiln Firing Facility
- **K** Cubing Station for Fired Block



FOR THE CERAMIC INDUSTRY INCLUDES:

Complete Plants for the Production of

STRUCTURAL CLAY BLOCK



In this vital new field of lightweight structural clay products, Swindell-Dressler has conducted basic research, pilot operation, and cost studies required to put full-scale production plants into being. Our services, from plant design to owner's key, can enable those manufacturers who have available suitable body compositions to take the decisive step forward into a market with outstanding potentials. The following operating sequence is representative of Swindell-Dressler production engineering.

Batching. A completely automated batching system includes weight hopper, mixer, and skip hoist to surge hopper over forming machine. The entire operation preset and controlled at the block machine station.

Forming. The block machine forming operation produces 1,000 block per hour from two machines, or 37,500 block per week to meet requirements of dryer and kiln. Machines are automatic in operation—only a single man is required to supervise their operation and control batching.

Rack Loading. At this station, with movement synchronized with block machine, pallets of green block are automatically loaded in racks, then fork lifted to the dryer.

Drying. Dryer operates continuously on a 6-hour cycle to condition the block for firing in tunnel kiln. Block to be dried in overnight shift are held in storage area adjacent to dryer.

Rack Unloading. Racks containing dried block are handled from dryer and dry block storage area to unloading station. Unloader automatically removes pallets and block from rack, strips the dried block from the pallet and places them on the hacking conveyor, the pallets being returned to the machine. Empty rack then moves to loading position in front of block machine.

Hacking. Block units are loaded manually onto kiln cars for firing in the tunnel kiln. Loading for overnight and weekend kiln requirements is done during the normal work week, with minimum work force.

Firing. Kiln holds 16 cars of loaded ware and utilizes a high concentration of fire power coupled with maximum recirculation and rapid cooling to hold the desired curve on a rapid schedule.

Cubing. This operation may be manual to begin with—automatic later. Cubes are handled by fork lift truck to yard storage and shipment.

Consult us—Swindell-Dressler's engineers will be in attendance at the American Ceramic Society Convention April 23-27 at the Royal York Hotel, Toronto. You are cordially invited to discuss lightweight stuctural clay unit production with them.

SWINDELL-DRESSLER CORPORATION

Engineers and Manufacturers

PITTSBURGH 30, PA.

The SWINDELL-DRESSLER CORPORATION of Canada, Ltd., Ottawa, Canada

Circle Service No. 59

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Pennsylvania Single Rolls furnish the most economical, efficient reduction method you can get for primary and secondary crushing of a wide variety of materials—including cement rock, gypsum, limestone, mine refuse, barytes and other friable ores, shale, slag, chemicals and phosphate rock.

Combining a slow speed operation with high capacities (up to 1200 TPH), all models feature *extremely low maintenance and operating costs.*

Pennsylvania Single Rolls require very little headroom, can be choke fed, and will handle wet, sticky or frozen feeds without showing noticeable decrease in capacity.

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Write for Pennsylvania Single Roll Bulletins, fully describing the many design features, operating advantages and application information on these famous "work horses."

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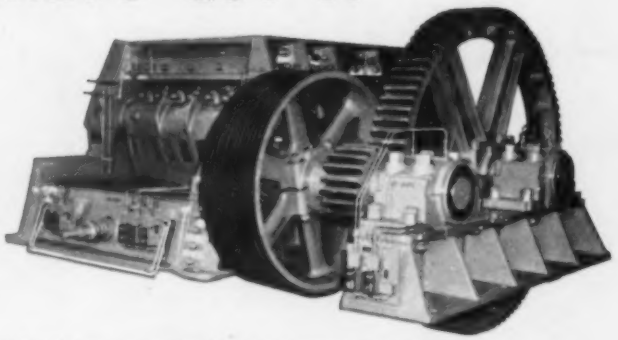

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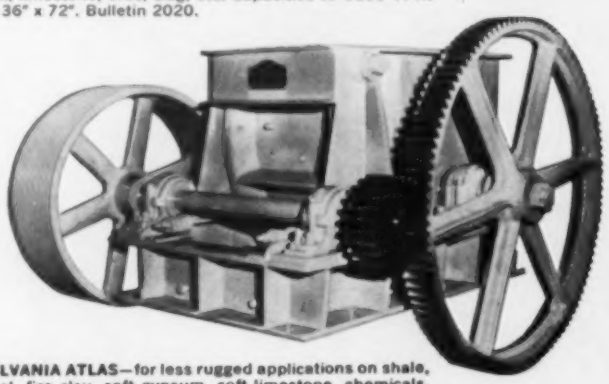

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PENNSYLVANIA
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Circle Service No. 60

See You in Toronto!

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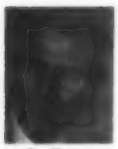
(Continued on Page 70)

See You in Toronto! (Continued)



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with "hand dressed"

BRICK

by **PITCHMASTER**

Here is a machine that incorporates the skills of the craftsman with more production muscle than twenty men.

Reach NEW markets, NEW profits by offering a NEW brick with greater depth of beauty.

- Culled brick can be converted to premium priced material.
- Fifty lineal feet of "Hand-Dressed" brick per minute.
- Instant adjustment to material height and depth of pitch. No limitation on material length.
- All material is conveyed through machine in a continuous flow by belts and rollers. Machine maintenance is reduced to the absolute minimum.

No other comparable machine in the field today will match the productivity and dollar profit that PITCHMASTER affords to make it a common sense investment.

NEW AND REVOLUTIONARY IN DESIGN! TESTED AND PROVEN

Names of satisfied users furnished on request

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Circle Service No. 62

A CAHNERS PUBLICATION

Brick & Clay RECORD

Devoted to problems of structural clay products, refractories, sewer pipe, terra cotta and masonry construction

5 South Wabash Avenue, Chicago 3, U.S.A.
FRanklin 2-6880

An Open Letter to the Industry:

Due to some very unusual circumstances and a final insurmountable block, we have been compelled to cancel our "Ceramics for the Future" exhibit this year. Therefore, there will be no exhibit for your viewing at the Toronto meeting of the American Ceramic Society.

It is an extremely regrettable development in view of the fine exhibit material already pledged. Over 50 exhibiors have been hard at work developing more than 100 items for display which would reveal to the attendants at the convention new ideas, products and applications in structural clay products and other branches of ceramics. With our ceramic technology and science moving forward so rapidly, this forced omission is indeed a vital loss to all those who took valuable time out of their busy schedules to come to the convention.

The number one stumbling block was the Canadian Customs Department. Those persons contacted in Canada on this matter could not allow the exhibit material to enter Canada duty-free. The duties imposed ranged from a few per cent to 50%. We did not want to subject our exhibitors to such a tax on top of shipping costs, insurance and brokerage fees. Therefore, we were forced to cancel this 1961 "Ceramics for the Future" exhibit.

Brick & Clay Record staff members did everything in their power, investing hundreds of man-hours and thousands of dollars to bring this useful exhibit to you in Toronto at the ACS convention. We regret our failure in this instance. However, we pledge to every ACS convention visitor and Brick & Clay Record reader that the "Ceramics for the Future" exhibit will be resumed in New York in 1962 and that it will be the biggest and best exhibit ever.

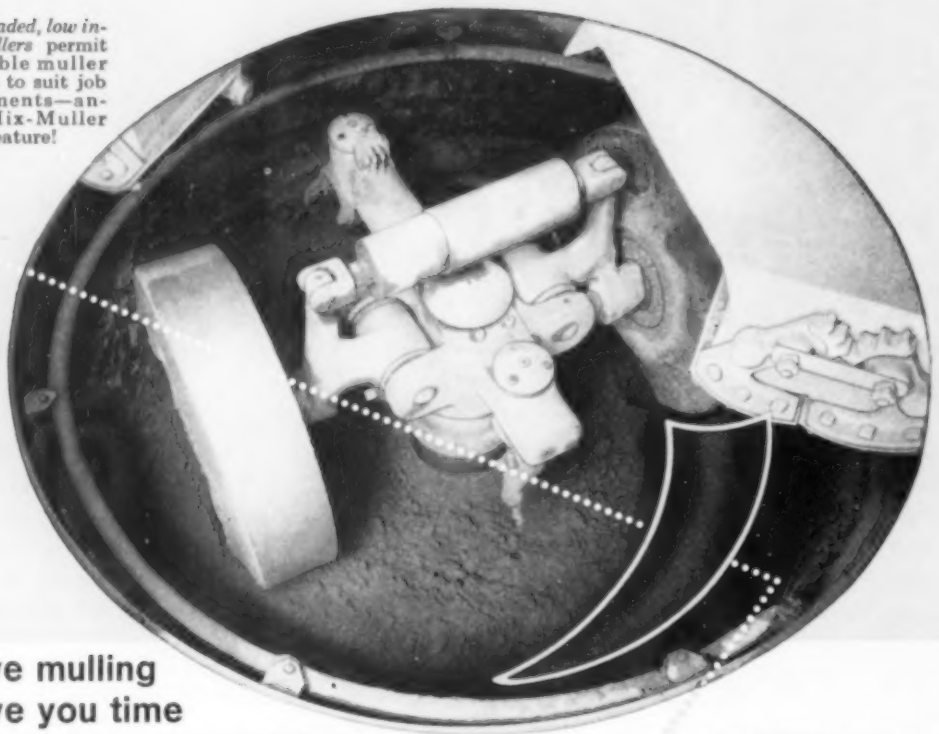
Faithfully yours,

The B&CR Staff

MIX-MULLER®

CONTROLLED DISPERSION FOR HEAVY PRODUCTS

Spring loaded, low inertia mullers permit adjustable muller pressures to suit job requirements—another Mix-Muller control feature!



P-350-R

Intensive mulling can save you time and expensive reprocessing

The Simpson Mix-Muller is specifically designed to put *you* in control of mixed properties. In this era of expensive, high purity materials such a machine can, in one operation, help you eliminate reprocessing, remixing and slash waste and rejects simply by making the *most* of prepared ingredients.

For these reasons, the rapid increase in the use of the Simpson Mix-Muller has paralleled the increasing availability of better, more uniform and more *expensive* raw materials.

For similar reasons . . . Mix-Muller usage has paralleled a new, enlightened attitude on mixing practice among processors who have learned that careful attention to mixing operations can be their most important source for *savings*.

Can you *afford* to settle for less than controlled dispersion?

See our advertisement: CHEMICAL ENGINEERING CATALOG

SIMPSON *MIX-MULLER*® DIVISION

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3 way mulling action saves material, coats each grain

. . . KNEADING
Because the mullers never touch the wearplate, you get an intensive kneading of the muller against material grains—through a deep bed of material.

. . . SMEARING
The inside edges of the wheel have a shorter distance to travel than the outside edges to provide a smearing action—across the wide face of the mullers.

SPATULATE ACTION
...Note that mullers are set slightly off true radius so that as they roll they also skid sidewards to provide a spatulate action.

. . . THIS IS CONTROLLED DISPERSION

WRITE FOR HANDBOOK
—on mulling. 12-page bulletin explains controlled dispersion—gives details on 9 Mix-Muller models (¾ to 60 cu. ft. batch capacity).

Circle Service No. 61

New officers of the Expanded Clay and Shale Association. From left are B. K. Powers, vice-president; Melvin Cruzen, president, and D. M. Groves, secretary-treasurer. A bright future for lightweight aggregate was predicted at convention.

Lightweight Aggregate Demand Grows

Production up 13% from last year, ECSA conventioners hear. New uses for aggregate in lightweight clay block announced.

Election of new officers, presentation of technical papers and forecasts of a growing demand for lightweight aggregate highlighted the annual meeting of the Expanded Clay and Shale Association, held at the Sheraton-Jefferson Hotel, St. Louis, February 23 and 24.

Melvin F. Cruzen, vice-president of Light Weight Aggregate Corp., Livonia, Mich. ("Beslite") was chosen as president of the ECSA group, succeeding Ron G. Hardy. Cruzen advanced to this post from the vice-presidency. To succeed him as vice-president, the lightweight aggregate producers named B. K. Powers, vice-president of Virginia Lightweight Aggregate Corp., Roanoke, Va. ("Weblite"), while D. M. Groves, vice-president of Shalite Corp., Knoxville, Tenn. ("Shalite"), was reelected secretary-treasurer.

Allentown, Pa., was chosen as the site of the mid-year meeting on July 20 and 21 after an invitation was tendered by William W. Karl, president of Lehigh Materials Co., ("Lelite"), which will act as host firm. The Americus Hotel of Allentown will serve as meeting headquarters. A tour of the Lelite plant near Tamaqua, Pa., will be a feature of the midyear sessions.

"The Tensile Strength and Diagonal Tension Resistance of Structural Lightweight Concrete" was the subject of a paper delivered on the opening morning of the 2-day meeting. Its author, J. A. Hanson, of the Portland Cement Association, described the results of a comprehensive study of 56 l.w. concrete beams—36 new and 20 old—using eight l.w. aggregates. Diagonal tension is more closely related to tensile strength than previously admitted. Modulus of rupture is an important factor. Architects and designers are more and more required to direct their thinking in terms of tensile strength rather than compression.

Hanson said that the full report will be studied by an appropriate committee of the American Concrete Institute. If the industry is to get any-

(Continued on page 117)

If you purchase products for HCP manufacturing . . . you won't want to miss June Brick & Clay Record*

*Heavy Clay Products

You can't afford to miss it!

It's the Review and Forecast issue that that every astute buyer in the heavy clay products industry reads before he makes his "last half" buying decisions.

You'll find a report on industry in June Brick & Clay Record . . .

the charts, graphs, and editorial reports on the progress of clay products production for the first half of 1961.

You'll read the predictions for "the second half".

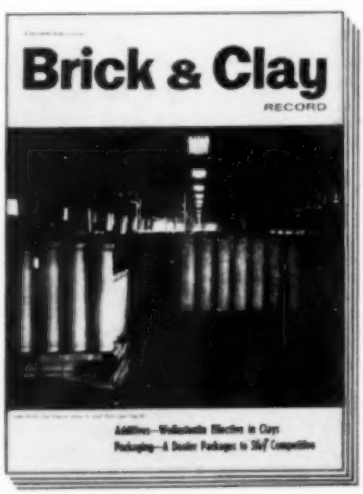
The graphic projections which estimate future production . . . the analyses which forecast purchases . . . the exclusive comments of industry authorities.

This "Review and Forecast" will stimulate buying! . . .

and will predict a prosperous second half for clay products production. It will signal "go aheads" to buyers to restock inventories . . . to expand their facilities. There will be a complete report on the structural clay products and refractories meetings at the Toronto A.C.S. convention, too.

NOTE TO SUPPLIERS:

A timely issue in which to advertise. A perfect opportunity to tell your product story to these men who buy your product . . . at the exact moment they will be deciding to buy. If you sell a material, tool, equipment or service for clay products production . . . **Don't miss this issue!**



June Brick closes May 20th. Complete plate deadline, May 24th.

BRICK & CLAY RECORD

A Cahners Publication

5 South Wabash Avenue

Chicago 3, Illinois

Clay Block Comes of Age

Exchange of ideas meeting attended by 215 industry members. Architects give nod of approval, want industry to start producing.

More than 215 industry members attended the Second Clay Block Conference, held at the Palmer House in Chicago March 23 and 24, 1961. Representatives from the clay industry and concrete block industry were present from all sections of the country plus Canada and Mexico.

Highlighted in the day and one-half sessions at the Conference were talks given by experts in the industry on the correct types of aggregates to use, the proper method of forming the block, the various methods of drying and burning the block and experiences in glazing a lightweight structural material. A fifth panel of architects and contractors from the Chicago area expressed their approval of the lightweight clay bonded unit once it was proven to them that it would do everything that has been said for it. When questioned about relative costs, this panel, moderated by Earl Benedict, architectural editor of *Building Construction*, a companion publication of BRICK & CLAY RECORD, replied that if the clay unit could be depended upon to have all the desirable characteristics of a clay masonry product, the price would have no effect on the use of the material. These desirable properties mentioned by the architects include low shrinkage factor, low warpage factor, normal absorption, good sound properties and, of course, normal strength characteristics.

The full report on the meeting appears in the following pages of BRICK & CLAY RECORD.

J. J. Svec opens conference.

Introduction

J. J. Svec, publisher of BRICK & CLAY RECORD, opened up the conference by giving a short history of lightweight clay block. He then pointed out the desirable properties of the block: Dimensional stability, sufficient strength, natural color, light weight, plus the fact that it can be permanently colored in the body or on the surface with ceramic colors and glazes. Mr. Svec also pointed out that the block could be made as a facing material or as a backup material.

He then asked the industry members attending the conference who is going to make the block. Since the brick and tile manufacturers are equipped for handling clay, making units and firing them, it is a natural product for them to make. He also pointed out that the concrete block industry is very much interested in making the block, as was evidenced by the number of concrete block manufacturers participating in the conference.

Svec then pointed out that once the production of the unit is underway, the product will add 10 to 12 billion brick equivalents to the clay products industry's production. With the brick industry producing at the rate of about 8 billion equivalents, it promises to more than double the capacity. Svec pointed out that they will be used everywhere that present concrete block is being used; in foundations, as back up, in commercial walls and in decorative walls.

The growth of the market and application will be gradual and will not disturb present products in the market. He pointed out that by 1965, the industry will be required to produce building products for many more homes than are required today.

Questions were then asked of the audience as to why production has not yet started on the clay-bonded unit. Svec asked how many plant operators, superintendents, and man-

(*Continued on page* 120)

Highlights

1. Buy your aggregate! To make it yourself would divert your efforts.
2. The aggregate and binder clay must be compatible for profitable production.
3. Correct grading of aggregate is the most important factor to achieve good results.
4. The bond clay should harden and mature at temperatures lower than those required to cause shrinkage in the aggregate.
5. A concrete block mechine, a hydraulic press or dry press can be used to form the block.
6. Get into production now with available aggregate. Learn to make block irrespective of weight. Aggregate can be changed later to improve product and weight will come down.
7. The best aggregate gradation to start with is one approaching that of a concrete block.
8. The block can be dried in a matter of hours with no particular difficulty.
9. The clay-bonded unit can be burned on a rapid-fire schedule, possibly as fast as 12 hours.
10. The block can be glazed successfully in a 1-fire process.
11. It is recommended that the block be made unglazed until normal difficulties are overcome.
12. The cost of manufacturing the block is comparable to that of making concrete block.
13. The block should not be made to compete with concrete block, but should be considered a superior product that will sell for a premium price.
14. Clay bonded units can be made in shapes other than block.
15. The architect will accept the product at a premium price once it has been proven.
16. To regain the clay products industry's share of the construction market, action must take place NOW!

Panel members discuss types of aggregate suitable for clay block manufacturer. Left to right, Charles Goodman, Ron Hardy, Gil Robinson, Henry Burns, Jr., and Robert Taylor. Many types of aggregate are available for clay block.

Types of Aggregate For Making Clay Block

Dr. G. C. Robinson, head of the Department of Ceramics at Clemson College, Clemson, S. C., moderated the panel which discussed the types of aggregate suitable for clay block manufacture. Panel members included Robert Taylor, director, Structural Clay Products Research Foundation; Charles Goodman, president of Material Service Corp., Chicago; Ron Hardy, Ludowici-Celedon Corp., who represented the Expanded Clay and Shale Association; and Henry K. Burns, Jr., Burns Brick Co., Macon, Ga.

Robinson introduced the subject by pointing out that there were many types of aggregates available for making a lightweight clay bonded unit. Typical examples of the aggregates include: Natural aggregates, expanded clay or shale, slags, prefired clay or grog, SCPRF aggregate, vermiculite aggregates and burnouts. The aggregates may serve a variety of purposes in the making of clay block, some functions being essential to successful manufacture, while other functions may add desirable characteristics to the finished properties of the body, but are not essential to the manufacture. Some of the essential functions of aggregates are to provide formability, dimensional control, reduction in

(*Continued on page* 124)

Forming Clay Block

Dr. William C. Bell, North Carolina State College, moderated the panel which discussed the formation of clay block and the problems and equipment involved in doing so. Panel members included L. Arthur Lassman, Benjamin Lassman & Sons, Glenshaw, Pa.; Robert Poole, Chisholm, Boyd & White, Chicago; Karl Nensewitz, Besser Machine Co.; Norman Small, Columbia Machine Co., Vancouver, Wash., and James Hansen, president of Mineral Wells Clay Products Co., Mineral Wells, Texas.

After introducing the subject on clay block forming, Dr. Bell reviewed the various processes which were used in some plants to form the clay block on an experimental basis. In using a concrete block machine, it was stated that the less water in the mix, the better the product would be. Too much water in the clay-aggregate mix will produce a sticky mass which would stick in the block machine or hydraulic press.

Dr. Bell then introduced James Hansen, who is operating a pilot plant making lightweight clay block. Hansen uses a 2-mold block machine in making the block and pointed out some of his errors. The most important thing in the forming of a block is getting the proper size aggregate and getting proper binding clay to make a good bond. Audience participation in this particular subject was very lively and many questions were the result.

Norman Small discussed his company's experience in the manufacture of lightweight clay block. A Columbia machine is currently in use at the Statesville (N.C.) Brick Co., and is currently making a 5 x 8 x 16-inch

(*Continued on page* 131)

How do you form clay block? This panel seeks answers. Left to right, Norman Small, L. Arthur Lassman, Robert Poole, William Bell, James Hansen Ralph Reiner, and Karl Nensewitz. Problems and equipment involved were discussed.

Drying and firing clay block was the subject for these panelists. Left to right, Roy Moffitt, David Anderson, Neal Mohler, Dudley P. Frame, Jr., L. B. Coffin, and Dean Tinker. These processes are said to present a minimum of problems.

Firing Clay Block

The subject of firing clay block was introduced by Neal F. Mohler, managing editor of BRICK & CLAY RECORD. Panel members included Dudley P. Frame, Jr., vice-president of Miller Equipment Co.; Dean Tinker, Ohio Kilns, Inc., Granville, Ohio; Roy Moffitt, North Carolina State College; L. B. Coffin, Alfred University, and David Anderson, project engineer for the Swindell-Dressler Corp.

Mohler opened up the discussion on firing clay block by stating the drying and firing of clay block presented a minimum of problems. Some operators are already drying the block in a matter of two hours and all tests indicate that the process of firing can be conducted on a very rapid schedule, possibly as low as 12 hours. Tunnel kilns could very readily be used for the drying and firing process, but Mohler stated his belief that a separate kiln and dryer would eventually be designed for handling this particular unit. While tunnel kilns and dryers can very well be adapted for this product, they are also quite expensive, and Mohler stated his desire that the kiln builders design and build a cheaper unit which would handle the block on a rapid-fire schedule.

David Anderson, mentioned some of the problems,

(*Continued on page* 122)

Glazing Clay Block

The fourth panel of the day was one which discussed glazing clay block and was moderated by Dean J. F. McMahon of Alfred University. His panel members included Burt Buehler, Cleveland Builders Supply Co., Cleveland, Ohio; George Pixley, Pelm Research, Inc., Newburgh, N. Y., and Joshua Lowenfish of the New York State Housing Authority, New York City.

Dean McMahon introduced the subject of glazing clay block by stating some of the university's experiences with this unit. Whether or not there would be a demand for this unit remained to be seen until Mr. Lowenfish requested that a suitable unit for a low cost housing project be designed. The university went right to work on the preparation of a clay block unit which would be glazed and meet all specifications of the Housing Authority.

George Pixley, a member of the staff at the university while this work was going on, then presented some of the problems involved in preparing a glaze for a lightweight clay unit. Pixley stated that it looked for a time that it would be very difficult to make such a glaze, but they finally worked out a suitable composition for application on a clay-bonded unit.

Burt Buehler related some of the production experiences of his company experienced in manufacturing this unit for the Housing Authority. It was highly recommended by Buehler that anyone wanting to get into the glazing of the clay block should start first

(*Continued on page* 124)

Panel members discussing the hows and whys of glazing clay block are, left to right, George Pixley, L. B. Coffin, Dean John F. McMahon, Joshua Lowenfish, and Bert Buehler. These panelists are experienced in this phase of operation.

Wrapping It Up

Friday morning's session of the Second Clay Block Conference saw the only formal presentation of papers at the conference. In general, the conference was on a very informal basis with audience participation invited and encouraged. The "Locatelli" press for forming clay block was discussed by Paul Kelsey, of the Philadelphia Brick Co., Philadelphia, who substituted for Louis Garlone, of Kelsey-Ferguson Brick Co., who was called from the meeting on the first day by the death of his father. Eight-mm. movies of the Italian press which is used for forming clay block in Italy were shown. The press uses a hydrostatic principle of forming block under as high as 100 atmospheres pressure. At present there are efforts by some manufacturers in this country to import this press for domestic production.

The "Burnite" process for manufacturing clay block was discussed by William H. Burnette, William H. Burnette and Associates, Hutchinson, Kas. The Burnite process uses volcanic sinter, scoria, pumice, perlite and pumicite. The difference and structure of the various volcanic products was discussed and Burnette stated that each one responds differently to temperatures. The Burnite binder which is made of volcanic products was discovered while engaged in producing an insulating material. One of the finest aggregates used with the Burnite process is scoria.

A summary of the meeting was given by Neal Mohler, managing editor of Brick & Clay Record. In his talk, "How to Get in the Block Business", Mohler showed that to get into the block business would cost about $100,000 if the manufacturer wanted to start on a small scale until such time that sales of the products might merit additional expenditures.

To wind up the session, a panel of architects and contractors discussed how they would use the product if it were presented to them. The masonry contractor, the general contractor and the architect are all in favor of having such a product available to them and they stressed their eagerness and desire to use such a product after it has been proven.

Personalities and Products

'Break time' brought the attendees at the conference up to the exhibit area for close inspection of the sample blocks on display.

Registration desk is beehive of activity on first morning of conference.

Caught by Candid Camera

Dave Anderson, Swindell-Dressler Corp., explains action of tunnel kiln firing to concrete block people present at conference.

Paul Kelsey, Philadelphia Brick Co., who substituted for Louis Garlone, explains Locatelli press, an Italian machine for dry pressing clay units.

William J. Richards, Owensboro Brick & Tile Co., holds a sample of SCPRF aggregate as other members of conference look on.

Samples of lightweight clay panels were exhibited by Alfred University at the conference.

Comparison at sample block is made by William Burnett (bow tie), who addressed conference on Friday.

Audience is attentive as they learn various aspects of clay block manufacture.

101 MINUTE MONEY MAKERS

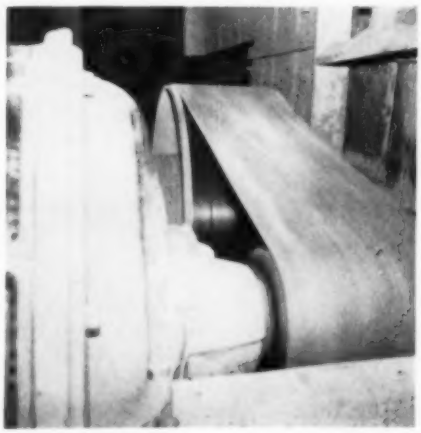
Here are 101—count 'em—101 Minute Money Makers, plant tested ideas designed to save money, increase efficiency and make your daily tasks more satisfying. Just about every aspect of clay products available is covered and any one of the ideas could be just what you are looking for. This is a veritable gold mine of ideas, so dig with pleasure and profit.

1

Making A Short Drive Center Work

Frequently it is impossible to allow sufficient space between a machine pulley and the motor driving pulley to take full advantage of the power unit. It would be possible if a wide enough pulley were employed, but sometimes the room for pulleys is limited.

The solution to such a problem is shown in the photo. In this case, the pulley on the pug mill was grooved. The grooves were about $\frac{3}{8}$ inch apart and $\frac{3}{8}$ in. deep. The flat belt was able to grip the pulley so well that no change in the motor size was necessary and future drives in this plant will be planned in this manner.



2

Palletized Production Cuts Down Handling

At some of the older plants where tunnel kilns are not in use, the entire materials handling is accomplished with a minimum of inconvenience through the use of lift trucks. At this refractories plant, the brick are palletized directly from the dry press, and set in the dryer with lift trucks. They are then taken to the kiln setting area by the same piece of machinery by which they are set.

3

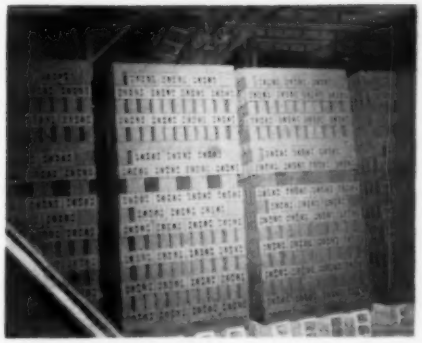
Gravity Conveyors Used To Load Periodic Kilns

The method of loading San Valle's six 10-foot high, 16-ft. x 24-ft. kilns, through a 3-ft. wide, angle iron-reinforced doorway is illustrated in this photograph. Gravity ball-bearing roller conveyors, 12 in. wide and 10 ft. long feed the tile from fork-lift delivered racks to kiln stackers directly inside the kiln. The company's operation is in Los Angeles, Calif.

4

Package Setting on Tunnel Kiln Cars

At Brazil Clay Products Co., Brazil, Ind., tunnel kiln cars are set for package setting and lift truck unloading. The brick are only handled manually at the off-bearing belt. They are set on dryer cars for lift truck handling and when the brick are dry, the tunnel kiln cars are set with lift trucks equipped with gripper forks. Twelve packages are set on each tunnel kiln car.

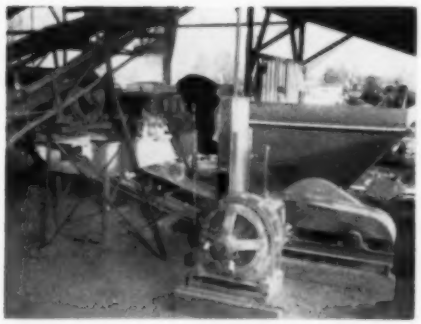


5

Permanent Ladders Increase Accessibility of Equipment

"Where's a ladder?" This was periodically heard in a tunnel kiln plant where long ladders were needed to reach air motors mounted on overhead air lines at the tunnel kiln. But now, wooden ladders, hard to find and hard to keep steady, are no longer needed. Permanent ladders, made of 1-inch pipe, are mounted beside each air motor. Since the air line was securely supported, the ladders were bolted to brackets welded directly to the air lines.

Accessibility to fans on top of tunnel kilns can also be had from ladders of this type welded directly to crown-support angles or buckstays. They can also be made from waste rebar or other suitable materials.



6

Automotive Transmission Regulates Crusher Speeds

At the plant of the McMinnville Brick Co., McMinnville, Ore., an automotive-type transmission between the electric motor and the gear drive of an Eagle double-roll clay crusher is used to vary the speed at which the rolls in the crusher turn. The changing of speeds controls the amount of material passing through the crusher. In this manner the plant operators can keep the double-roll crusher coordinated with the grinding and other reduction equipment in the circuit.

7

Freezing Temperatures No Hindrance to Exterior Work

On a bricklaying job in Louisville, Ky., the walls of a school were laid despite freezing temperatures.

Wooden frames were erected around the foundation of the school and sheets of clear plastic were spread over the frames in the fashion of a schoolhouse. Kerosine-burning salamanders were used inside the structure for heating. As many as 15 bricklayers, nine hod carriers and two electricians worked inside the structure at one time, and while outside temperatures were freezing, conditions inside were described as "warm as toast."

The foreman on the job estimated the 225 feet of plastic covering cost around $800 in materials and labor. The plastic is in 16-foot sections and can be moved easily as work progresses.

10 MINUTE MONEY MAKERS

Electric Heaters on Dies Speed Dry Press Operation

8

By permanently installing heaters in the dies on the dry press, one refractories plant has speeded up its forming operation materially with resultant savings in lost production time. 1000-watt heaters are used, which supply just enough heat to prevent sticking. This lets the dies lift free, permitting the operators to move the formed brick immediately.

Keeping Belt Conveyors Clean

9

Spiral-type conveyor idlers are in use at the Belden Brick Co., Sugar Creek, O., to keep all their conveyor belts free of sticking clays and shales. As the belt slides over the idlers, the spiral action of the idlers sweeps all the sticking clay from the under side of the conveyors. The idlers not only eliminate the need for artificial heat on the conveyors, but help to maintain a cleaner plant.

Setting Brick for a Packhauler with a Forklift

10

Tom Coleman of the Nash Brick Co., Rocky Mount, N. C., has been using a method of loading brick that eliminates 80% of the labor involved in hand loading the cube for Packhauler handling.

A base course of brick is set up by hand and then a fork lift truck loads four cubes of brick directly on this base course. The base consists of 308 brick set on end, 22 across by 14 deep. Three courses of brick laid flat are then placed on top of this, completing the base.

The foundation thus serves as the base for the four cubes of brick and also as the finger brick for the gripping mechanism on the Packhauler Body.

Portable Strapping Rig Uses Motorcycle Wheels

11

The problem of moving steel strapping over rough ground has been easily solved to the satisfaction of Robinson Brick & Tile Co., Denver, Colo. The company bought a pair of used motorcycle wheels; new axle mounts were welded on both sides of a steel frame of a drum rack to provide for heavy axle spindles on which the wheels are mounted. Provided with low pressure tires, the improvised wheels have been working very well. Robinson at first tried bicycle wheels, but they proved to be too weak for everyday use.

Keep Extra Reel on Rack Next to Cutter

12

At the Southern Brick Co., Ninety Six, S.C., an extra cutting reel is kept right next to the cutter so that changeover time is kept at a minimum. An overhead crane is utilized to make the changeover with a minimum of effort. All platen adjustments are made on the reel before it is installed on the cutter.

Packhauler Stacking Forms Go Along on the Job

13

The trays shown in the accompanying photograph serve dual purpose and can be made to serve a third, if desired. The tray forms a guide for stackers and save stacking time when forming the Packhauler cubes. The tray stays with the stack all the time to hold the bottom course of brick in place and protect them from dirt which might accumulate in storage.

If desired, an advertising message may be printed on the bottom of the sort, so it is visible when the brick are shipped to the job.

Moving Loading Dock Bridges

14

A special pneumatic-tired hand truck is used to move and place heavy steel bridges between the loading dock and railroad cars at the Southern brick company. The truck is equipped with a simple foot brake and can be operated by one man with a minimum of effort. A similar hand truck is also used to move waste heat pipes to and from kiln doors.

Eight Tips to Prevent Bottom Brick Cracks

15

(1) Use coarse sand on the bottom to keep the brick from sliding on same.

(2) Do not have the front bottom auxiliary burners too hot.

(3) Avoid shock to ware due to recirculating fans blowing against the bottom course. In this case reverse the fans from top to bottom. If too much clearance exists between the setting and kiln walls, even top to bottom circulation may crack the bottom brick; in this case set the brick to within 2" of walls, and if necessary, open vertical flues in the setting.

(4) Raise up the bottom deck if possible.

(5) Be sure car and seals are tight.

(6) Use green slabs ½" thick under the bottom brick.

(7) Keep a short flame on auxiliary and all burners.

(8) Oxidize ware completely ahead of the fire zone.

101 MINUTE MONEY MAKERS

16

Clean Shovel Buckets for Efficiency

Digging wet, sticky clay with a dragline is often an inefficient operation since the clay will stick in the bucket and reduce its capacity. One clay pit foreman solved this problem by welding one end of several 2-foot lengths of chain on the inside end of the bucket. When the bucket is dumped, the force of the chains moving forward is sufficient to push out most of the sticking clay.

17

Cool Hot Material on a Belt

Hot aggregate leaves the coolers after rotary kiln firing and is deposited on this rubber belt at the Rocklite Products Co., Ventura, Calif. The aggregate is still too hot to handle, so a water spray is applied to it on the belt. The spray accomplishes three things. It prevents wear of the belt by the hot aggregate, it cools the aggregate and it holds down the dust to a minimum.

18

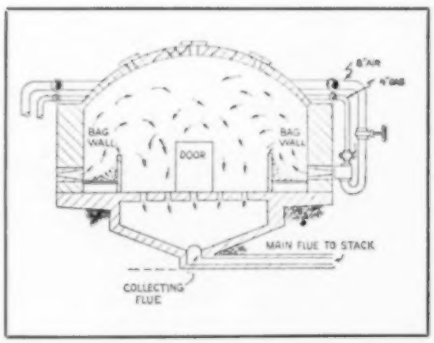
Packaging Template Moves with Package

Another in the many innovations which individual operators have developed in packaging is the template for making packages of brick which moves with the completed package. The template is set on the roller conveyor and after the brick are formed, the template and package both move to the strapping station. Notice the tabs on the side of the template which serve as the guides for the bottom brick.

19

Burner Problem Caused By High Wind

Kansas Brick & Tile Co. at one time had a problem caused by high winds sweeping across the prairies. These winds caused a partial vacuum on the downstream side of a periodic kiln, resulting in burner flames flashing back to the outside of the kiln. This uneven heating caused brick discoloration. The problem was solved by use of buried-type nozzle mixing gas burner equipment. The burners are installed at the bottom of the kiln and manifolding of gas piping and air piping is overhead at the top of the kiln. Use of these burners cut gas consumption by 160,000 cu. ft. per burn; ware now comes out 100% quality, where before 20% to 30% were seconds.



Transport Clay Pipe Rapidly

20

Rapid transportation of dry clay pipe is easily accomplished at the W. S. Dickey Clay Manufacturing Co.'s Pittsburg, Kas., plant by a special rack which holds the pipe by the bell. The spigot end rests in a contour bed near the base of the attachment which fits on a fork lift truck.

Dust Collection Accomplished by Washing Gases

21

The Carolina Tuff-Lite Co., Salisbury, N. C., had quite a fume and dust problem in their lightweight aggregate manufacture until it installed the gas washing system illustrated in the photograph. The gases from the sintering machine are blown through a series of baffles inside the room along with fine sprays of water. The gases are virtually cleaned before being exhausted to the atmosphere.

Water from the process is diverted to a settling pit where the impurities collected in the washing process are allowed to settle. This water is then reused in the process, providing an almost free supply of water.

Curing Bridge Cracks in Cored Ware

22

The following suggestions are worth trying to correct cracks across the core hole. Generally these are not due to drying but to the core bridge itself:

(1) Use spacers or rings on the die to give the clay more time to heal together.

(2) Roughen up the core bridge. Use chain links across the bridge.

(3) Keep the cores back from the outlet end of the die about $\frac{3}{8}$".

(4) If core holes are too large, out of line or too many in number, there may be insufficient clay between the hole or holes and the face or ends will crack. In this case, allow more clay between the holes and face or ends. Sometimes, actually enlarging the center holes so as to compress the clay between these holes where cracking was occuring will prevent cracking between these holes.

(5) If difficult to dry, add $\frac{1}{2}\%$ soda ash.

(6) Try decreasing the amount of vacuum in the die, if it is a very plastic clay.

Portable Lubrication Station

23

In plants where kiln car bearings provide a serious problem, an inexpensive auxiliary lubrication station may be the answer to proper lubrication. Many times, cars will move freely while the bearings are hot, but when they cool, they may have a tendency to freeze. This apparatus can be taken to the proper location and the car lubricated at the site. It is also possible, with the correct nozzle, to lubricate cars in the kiln with this rig.

10 MINUTE MONEY MAKERS

How to Speed Die Changes

Acme Brick Co.'s plant at Bridgeport, Texas, uses two auger machines in parallel, with both fed from a common pug mill to speed up die changes. When time comes for a die change, the entire crew moves from one machine to the other machine which is already set up for further work. This enables Acme to keep producing ware while die changes are being made and eliminates time that could be lost because of breakdowns.

24

Load Stabilizer on Fork Trucks

25

In one plant manufacturing clay pipe, some green pipe must be set on castered trailers for movement along the tunnel kiln setting area. A variation of the holding device on the lift truck raises and lowers, enabling operator to place pallet loads of such ware on the trailers without handling damage.

Proportioning Color Additives

The Stone Creek Brick Co., Stone Creek, O., gets the exact color in every batch by proportioning brick ingredients with Jeffrey Waytrols. These electric vibrating feeders are used in clay processing plants for automatically weighing and delivering specific quantities of material in the making of various products.

26

Double Service Life of Muller Tires

27

The accompanying picture shows the muller wheels and supporting yoke of an Eagle dry pan at Vincent Clay Products Co., Fort Dodge, Iowa. The tires on the mullers are of Ni-Hard nickel-chromium alloy iron, shown after two years of active service. It appears, based on a study, that these Ni-Hard tires will yield about twice the service life of the semisteel tires which they replaced. The Ni-Hard tires cost only a little more than the semisteel. Vincent Clay Products is very pleased with its switch to Ni-Hard for this application.

Dryer Car Hoists Make Resetting Easy

28

This switch in tunnel kiln setting is practiced at the West Virginia Brick Co., Charleston, W. Va. Instead of the tunnel kiln car moving up or down to correspond with the setter's ease of settling, the setter himself and the dryer car are raised.

The operator controls the rise of the platform by a push button that actuates a hydraulic system. He can always set ware on the cars at table level, making the job much easier.

Performance Records of Periodic Kilns Pay

29

A simple daily record of the performance of periodic kilns can turn into an important item for production planning in a short time. It should be kept in a plant office where it is available to all interested personnel. When posted early in the morning it is a picture of the status of each kiln.

After a month or so of daily posting the chart will be the basis for planning kiln work to avoid delays in setting which interrupt production. Where several kilns are on the same stack the chart will aid in the arranging the start of the burn so that the stack is always hot.

The symbols used are: B = burning; C = cooling; S = setting; D = drawing; E = empty, and St = Storage (cool enough to work in, partly set, or partly empty).

The following sample is arranged for six kilns but the plan can be applied to any number of kilns:

Date	*Kiln No. 1*	*2*	*3*	*4*	*5*	*6*
5/1	C	S	D	B	E	C
2	C	B	D	B	S	C
3	D	B	E	B	S	C
4	D	B	S	C	B	C
5	E	B	S	C	B	D
6	E	B	B	C	B	St
7	S	C	B	C	B	D
Sunday	St	C	B	C	B	E
9	S	C	B	D	C	E
10	B	C	B	D	C	S
11	B	C	C	E	C	S
12	B	D	C	S	C	B
13	B	D	C	S	C	B
14	B	S	C	B	D	B
Sunday	C	St	C	B	St	B
16	C	S	St	B	D	B
17	C	B	D	B	S	C
18	C	B	D	B	S	C
19						
20						

The idle time will stand out if empty (E) and storage (St) items are posted in red.

Motor Trouble Eliminated by Pressurized Hood

30

Bothered every three months by an expensive plant shutdown and motor rewind job on one of its conveyor motors, the Shaleite Corp., Knoxville, Tenn., manufacturers of lightweight shale aggregate, searched everywhere for a solution to the problem. The motor was situated next to a soaking pit where the hot aggregate was quenched and was subjected to steam and the grit and dust commonly associated with the lightweight aggregate industry.

The problem was solved by constructing a hood around the motor and introducing fresh air into the hood. The positive pressure inside the hood keeps the steam and grit and dust from entering and causing damage to the motor.

MINUTE MONEY MAKERS

Homemade Burner Tile Saves Money

Much of the money spent on purchasing replacement burner tile was saved in one plant by casting burner blocks from refractory concrete. Wooden forms lined with thin sheet metal are used as molds. To make the forms more durable, they should be given two coats of varnish before the sheet metal is tacked in place. Wing nuts are used to fasten the forms together for speed and ease in stripping out finished blocks. A 1:2½ mixture of cement and grog has proved to be satisfactory. The grog was made by crushing scrap brick to minus ⅜ inch.

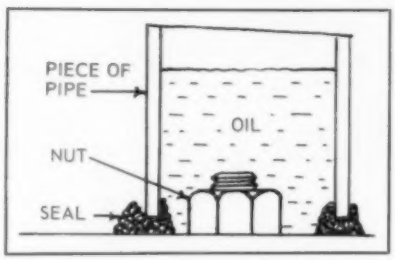
31

How to Loosen That Rusted Nut

Sometimes you can't unscrew a nut because it is badly rusted. You try to oil it but the oil runs off. The accompanying sketch shows how to create a small "tank" of oil on top of the nut. In this way you can give the rusted threads a thorough soaking.

32

As indicated, a piece of pipe serves as the oil reservoir. A ring of putty or modeling clay can be made to serve as a seal between the pipe and the lower surface so that the oil won't leak out. In fact, if you have no piece of pipe and if you have enough putty or clay, you can make the reservoir entirely of the putty or clay, without the pipe. The important thing is: Submerge the nut in the oil.



How to Flash Tunnel Kilns Successfully

Chemical flashing of tunnel kilns can be done for approximately $1 per thousand brick. Several steps should be carefully watched to assure that the proper technique is applied. Also compounds used in the flashing should be purchased with specifications consistent with their future use.

This assures the chemical producer of the application of his product and will result in proper compounds for the particular plant operator. One company reported that they always request that any order for flashing compounds contain the information as to the type of kiln in which the material will be used.

33

When the designated kiln car has passed through the water smoking section and reaches the preheating zone, it is now approaching the area where chemical flashing preparations are to take place. This is between the preheating zone and the No. 1 burner—the "flashing zone."

An opening about the size of a half-brick should be prepared in the center of this zone. Place a blower in the opening. The blower used should have just enough force to blow the compound into the kiln car. One producer of flashing compounds reports that five to 10 pounds of their compounds should be used for each 1,000 brick on the car. The exact amount is dependent on the depth of color desired. Using this method and careful checking during preliminary attempts should result in a uniform production of fired ware.

Changing Direction of Brick On Belt

34

Changing the direction of a brick on a belt is easily accomplished by an auxiliary powered small belt as shown in the accompanying photo. This apparatus is also used in one plant for depositing the leftover brick from the hacking belt onto the waste belt. In cases where the brick are changed in direction only, a minimum of marking of the brick is accomplished. The speed of this auxiliary belt should be adjusted so prevent clogging.

Magnetic Separator For Tramp Iron

35

In plants where tramp iron is a nuisance, a magnetic separator may be the inexpensive solution to the removal of this material. The separator should be installed high enough above the belt to clear any overage of material on the belt, but still close enough so the material will be affected by the magnetic field.

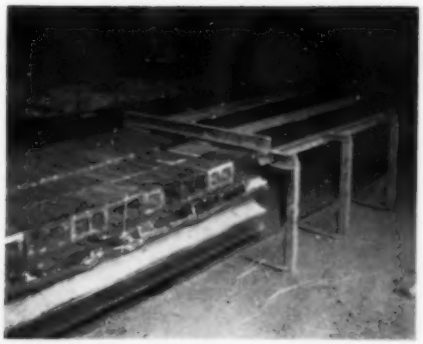
Equal Tension on Both Edges of Belt

36

How can a quarter turn belt be put on the pulleys so that there will be equal tension on both edges of the belt and the belt will not be stretched or strained entirely on one edge?

This can be done by going through the motions of joining a belt in the usual way, but before joining simply give one end of the belt a turn through 180 degrees, before splicing. Thus, after being joined together you will have both the flesh and hair sides on the outside to join as well as on the inside.

The action of a belt spliced in this way is to turn itself over every revolution so that the maximum tension is first on one edge during one revolution and on the other edge during the other revolution. In other words, during one revolution the flesh side is next to the pulley and during the next revolution the hair side is next to the pulley. This method usually works out very well.



Guide Straightens Car Tops

37

Commonly respected as a serious problem in tunnel kiln operations is the car top maintenance and replacement problem. This has developed into a continuous program, especially where kilns are more than five years old. Ashe Brick Co., Van Wyck, S. C., took one step toward proper replacement of tops by installing a guide which follows the hearth dimensions of their tunnel kilns. Using this guide, or you may wish to call it a template, an unskilled car repairman can maintain the tops properly. Located in a repair station, all the cars have to pass the guide before getting to the hacking stations. For operators with no convenient repair station, the templates could be installed before the hacking stations to prevent any faulty cars with protruding tops from getting into the kiln.

10 MINUTE MONEY MAKERS

Chopping Waste Brick from Hacking Belt

38

A waste chopper is being used in some plants that reduces green waste to minus two inches in size. The chopper is intended to be located at the end of an off-bearing table or just above the primary pugmill of an extrusion machine. Standard 18-inch harrow discs and scrapers are used. A 2-inch square hole is cut in each disc, and one scraper per disc prevents buildup and clogging. One chopper on the market is made by J. C. Steele & Sons. Other plants have built similar models of their own.

Jig For Banding and Gripping Wires

39

Getting the gripping wire around a pack of cubed brick is no longer a tedious job for the Lachance Brothers Brick Co., Gorham, Me. Using the jig shown in the accompanying photograph, one end of the wire is inserted into the groves of the jig. The pipe in which the wire is inserted runs around the pack, and when sufficient lengths of wire are pushed through the pipe, the end of the wire comes through at a convenient spot for the strapping operator to reach and complete the tie.

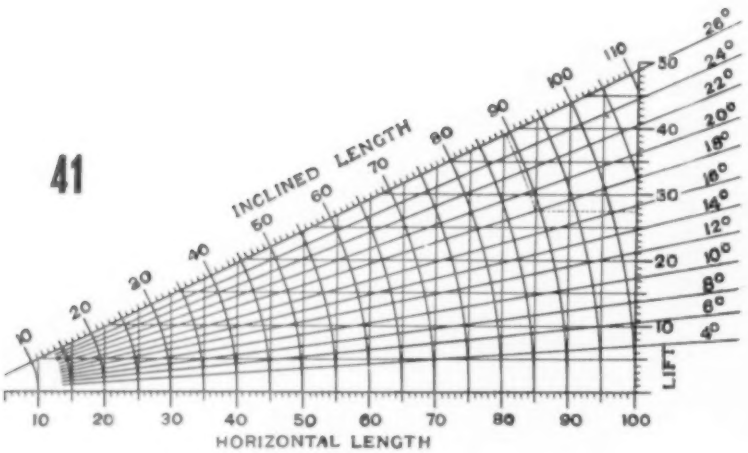
Tractor Type Lift Truck for Rough Terrain

40

Handling packages of brick over unpaved areas can be quite a problem, especially when the unpaved area consists of rough terrain. To solve this problem, the Lachance Brothers Brick Co., Gorham, Me., use this tractor-type lift truck equipped with regular tractor wheels. The size of the wheels and the large air-cushioned tires take up the shock of the uneven ground, so that the load is stabilized on the forks at all times.

Finding Angles of Sloped Conveyors

41



The accompanying chart is a quick method of calculating the inclined length and the degree of slope for inclined belt conveyors. The example, as indicated by the line, shows that a conveyor with a horizontal distance of 85 ft. and a lift of 27 ft. would have an inclined height of 89½ ft. and a slope of 18°.

Preheat Oil With Waste Heat

West Brothers Brick Co., Washington, D. C., uses waste heat to preheat their No. 6 fuel oil. Instead of using electic heaters, the fuel is pumped through a chamber through which the waste heat from the kiln also passes. The temperature of the oil is automatically maintained at 230°F by the use of dampers which open and close automatically, regulated by a thermostat, allowing outside air to enter the chamber and cool the oil if necessary.

42

Hard Surfaced Muller Tires Give Twice the Wear at Half the Price

Hard surfaced muller tires in use at Valley Brick & Supply, Van Nuys, Calif., are lasting twice as long while costing half as much as unprotected parts.

Used in an American dry pan muller, the tires work against highly abrasive rock and clay in the brick production process. This abrasion combined with impact from the 2-ton wheels make wear resistance a prime consideration.

43

Normal service life for unprotected SAE 1020 steel tires is one season; when protected with an overlay of Colmonoy No. 2 hard surfacing electrode applied by arc welding, service life jumps to two seasons. Rebuilding costs are just 50% of the cost of a new wheel. Thus the maintenance and replacement cost savings are fourfold.

Make Wire Guards for Belts and Machines

An easy and excellent way to make wire guards for almost any kind of machine is to make the framework out of angle iron and the sides out of wire cloth of suitable mesh.

First make the frame. Angle iron is not easily bent without cutting out portions of the flange. That is, cut out some V's from the inner flange where the bend is to be made. If the bend is to be 90°, cut out a square V. If the bend is to be 45°, cut out a 45° V and so on. In other words, cut out a V whose angle is equal to the bend wanted.

44

After the frame is formed, put in the wire cloth or screen. The quickest way to fasten the wire in place is with a welding torch. The same torch may be usefully employed for welding the frame work together before proceeding with the wire. Simply "spot-weld" the wire terminals in place on the inner flange of the frame.

If no welding outfit is available, the wire may either be riveted or bolted in place. Punch holes through the inner flange, at the wire terminals and then rivet or bolt. When carefully made, entirely of metal, a guard should last indefinitely.

Keep Kiln Car Bearings Clean for Smooth Operation

The obvious reasons for some faulty kiln car operation is illustrated in the accompanying photograph. To insure proper kiln car operations the bearings must be kept free of slime and grit, which accumulates in the bearings of a kiln car after periods of use.

45

Periodic inspection of one wheel of a car will reveal when the bearings should be cleaned.

101 MINUTE MONEY MAKERS

Expedite Oxidation Of Glazed Ware

46

Oxidation of glazed ware is more difficult than unglazed ware. To expedite this process, follow these suggestions: (1) Try to complete the oxidation before the glaze fuses. Very often this requires a change in the fusion temperature of the glaze by a change in composition, or time must be taken for proper oxidation before the glaze fuses. (2) Be specially careful to properly graduate auxiliary burners. (3) Break quarry tile, same as smooth brick, loose from one another so as to prevent sealing together of the faces.

Make Full Use of Cutter Shavings

47

West Brothers Co., Washington, D. C., has developed a simple idea that lets the company make full use of cutter shavings. A 24" belt conveyor running underneath the cutter collects all the shavings from cutting. A little further down, this belt passes under a magnetic separator which removes cutter wires and other metal, leaving clean clay. The scrap clay is then dumped into the waste belt and returned to the pug mill, making full use of the material. The saving in clay is not the main reason for doing this; the main reason is cleanliness in the plant and the ultimate saving in manpower in keeping the plant clean around the cutter.

Blending Clays in the Pit

48

Possibly one of the simplest methods of blending clays in the pit is with the shovel itself. Where several usable layers of clay lie in the same bank, the best method of blending is to have the shovel operator make a full swing with dipper, starting at the bottom of the bank and working up to the top.

Simple Device Insures Continuous Material Flow

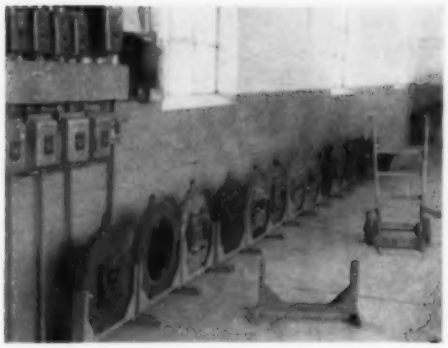
49

In the operation of any continuously operated rotary kiln, one of the most important factors in successful operation is a continuous flow. A continuous flow of raw materials is essential to prevent the temperature of the furnace from increasing and decreasing alternately.

The formation of rings and logs in a rotary kiln is caused by surges of raw material and also variation of temperature. The Kentucky Light Aggregates Co., Louisville, Ky., realized the importance of maintaining continuous flow of raw materials through their rotary kiln.

The raw material is stored in a concrete silo and removed from the silo by means of a conveyor belt in a tunnel beneath the silo. Since this operation is completely automatic, the operator of the kiln is at the discharge end of the kiln and for that reason cannot see the amount of material on the feed conveyor belt. An electric feeler switch was installed on the loading end of the conveyor belt, just beneath the silo. The switch is so constructed that as long as the conveyor belt is properly loaded, the switch will be up and will show a green light in the control room. If, however, for some reason the raw material does not feed properly onto the conveyor belt, the feeler arm will drop and cause an alarm to be sounded in the control room.

The installation of this switch not only makes it possible to eliminate an extra man on the operation, but it also guarantees a continuous flow of raw material through the rotary kiln.



Die Storage Holder Pays Off

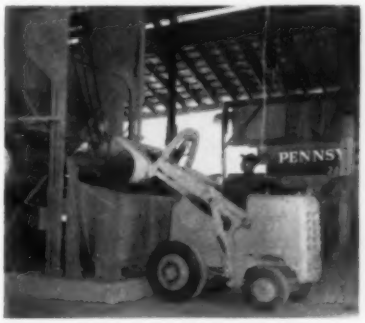
50

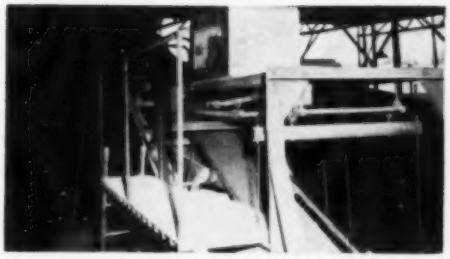
Yankee Hill Brick Co., Lincoln, Neb., has worked up the die storage holder shown in the photograph. When a die is removed from the brick machine, it is placed in a holder and then wheeled by hand truck to the storage line in a corner of the mill-room. The side arms on the truck make moving a die a 1-man job, increase safety and prevent cores and bridges from being knocked out of line. Many times before Yankee Hill developed these holders, the plant didn't discover that a core was out of place until bad tile began coming out of the dryer.

Bumper Around Hoppers Saves Wear and Tear

51

A concrete bumper placed at the correct position around a hopper will save much wear and tear on the hopper itself, along with wear and tear on the machine being used to dump clay into it. The bumper should be positioned so that the front wheels of the loader will stop the forward movement of the machine at the correct position to drop the load into the hopper. Dented hoppers and front end buckets can be eliminated by proper utilization of a correct bumper.





Providing Uniform Feed to Pug Mill

52

By measuring the feed in the pug mill at Atlanta Brick & Tile Co., Atlanta, Ga., it was found that there was a big variance. By installing weight-type control feeders which control the vibrating feeders, the rate of feed to the pug mill was kept at a constant rate. This fact enabled the company to more accurately control the pugging operation which resulted in a more uniform column.

Service Life Of Augers Tripled

53

A change of the hard facing material used to rebuild the flights of augers at one plant has increased the service life of the auger from an average of two months to six months.

In addition, downtime for changing augers has been greatly reduced and the time of application of hard facing is less than half. This means a savings of two to four hours of plant downtime each time a replacement is eliminated, and a saving fo a full day's time for hard facing the augers.

In the particular application mentioned above, a tungsten-carbide hard facing material replaced a cobalt-chromium-tungsten alloy hardfacing. The 9-in. diameter helix is shown after rebuilding in preparation for hard-surfacing.

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Keep Kiln Car Maintenance Records

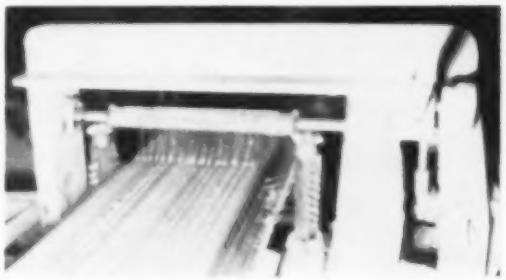
54

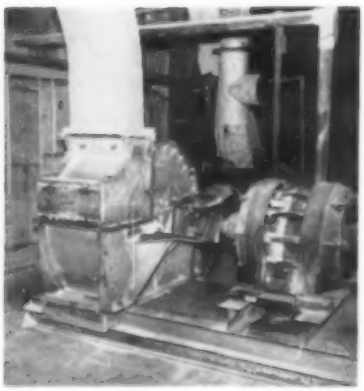
To know how long your kiln car decks are lasting, you must keep records. One foreman in charge of kiln cars uses a 500-page bound ledger book to note repairs to the cars and the dates they are made. The pages are numbered, and he keeps each car's record on the page corresponding to the car number. It is now a simple matter to figure the average life of car decks and to tell what causes most failures. The ends of the cars are also dated with a ceramic stain when the decks are replaced, showing at a glance how long the car has been in service.

One Machine Provides Variety of Textures

55

The texture machine shown in the photograph scores a predetermined number of brick and then stops. After a selected quantity of plain brick are made, the machine will again automatically score a predetermined number of brick. This machine is in operation at M. Lanz Brick & Tile Co., Pittsburgh, Pa. Many types of finishes can be applied, all automatically, and without an operator. The apparatus is driven by the moving clay column and requires no external source of power.





Hammermill Equipped with Knives for Pulverizing

56

Sawdust is chopped very fine in this hammermill which is used by the Johns-Manville Corp. in its Zelienople, Pa., plant for the production of insulating firebrick. The mill is equipped with knives instead of hammers and provides a very uniform-sized sawdust.

Hard Facing Balances Wear Cycle on Muller Tires

57

Wear patterns on muller tires aren't always alike; two mullers operating in identical materials may wear differently and at times unevenly. Hard-facing the low spots will serve to balance uneven wear, even though the source of trouble is mechanical.

Here's an illustration. A muller tire in a brick plant developed a distinct pattern on the outer half of the crushing surface during a 3-year period. Standard procedure in the past called for grinding the high side of the tire to the same dimensions as the low side. After successive grindings, of course, there was nothing left of the tire shell and it had to be replaced . . . a costly operation at best.

This time, however, it was decided to add to rather than take away. Hard facing was applied to the low side and the tire was returned to service. After one year, very little wear was evident and the wear pattern had balanced out. At this point, the entire grinding surface was hard-faced with Stoody 21. What wear does occur—and the plant operator says it is negligible—is balanced, resulting in a higher production rate and extended service life of the pan.

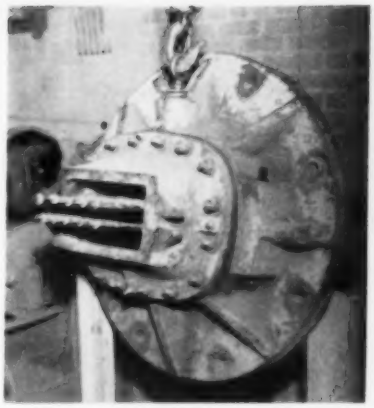
58

Thin Down That Bridge

Here is a successful attempt by West Virginia Brick Co., Charleston, W. Va., to reduce the bridge and core extender rods in a die.

The brick die with thin cores has a very thin bridge for both sets of core rods. The rods themselves are about ½ inch in diameter. The entire assembly looks rather light but is strong and does the job fully as well as heavier bridges. In fact, the less iron in back of a bridge, the easier the extrusion and less change of clay parting after extrusion.

Both front and back of the die are shown.



59

How to Flash Scove Or Up-Draft Kilns

Clay products producers, firing scove or up-draft kilns, should study the following directions carefully if they wish to scrutinize their present flashing techniques or achieve improvements.

After the burn is finished and the kiln ready for flashing, the entrances of the arches should be closed as tightly as possible with an iron plate or door. The burners, oil or gas, should then be adjusted to create a reducing condition. This is done by cutting off the air pressure completely, allowing the raw gas or oil to burn into the arches.

Properly done, this will result in a dense smoke flash. However, sould it not create a smoke flash, coal or wood should be introduced into the smoke arches. If not available, use of chemical compounds can be introduced to create a smoke flash.

The smoke flashing should then be continued for a period of from one to two hours—enough time so that the brick in and above the arches are in a blackened state.

The flashing compound should then be introduced. About five pounds per thousand brick should be sufficient.

It might be wise for the kiln operator to again check his kiln, to assure himself that all arches are closed as tightly as possible.

Arches and doors of a scove kiln should be sealed with a cement mixture and a heavy layer of old brick or sand placed on the roof of the kiln to keep the fumes from escaping through the top. The color flashing operation should continue for an hour or two. After this period the burners should be cut off, allowing the kiln to cool as rapidly as safely possible. The careful observance of these instructions, plus use of proper compounds, should result in successful flashing at all times.

60

Save 30% On Explosives

Fertilizer grade ammonium mixed with No. 2 fuel oil can be used in place of dynamite with a savings of 30% or more on your explosives bill. At the W. S. Dickey Co., Pittsburg, Kas., this ammonium nitrate is put into paper tubes and set in the blast holes.

It can be detonated by a primer such as dynamite caps or other high explosives, or by using continuous column detonation such as Primacord. Ammonium nitrate is less sensitive than other high explosives and is more easily stored and safer to handle. However, it is an explosive and should be treated as such. Do not try it till you get expert advice on its use and storage.

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61

Eight Tips for Oil Burner Operation

(1) Steam and mechanical-atomizing burners are so designed that it is possible to operate with a minimum of from 5 to 15% excess air in the furnace. A deficiency of air will be indicated by black smoke, while an excess is indicated by an absolutely clear stack. Set the burner register so that a light brown or blue haze is produced.

(2) Furnace pulsations usually occur with a considerable deficiency of air, the remedy is to decrease oil or increase air supply. Another source of pulsation may be too high oil temperature.

(3) Keep burner tips free and clean of carbon, so as to maintain the proper degree of atomization.

(4) Maintain correct oil pressure and temperature to insure proper viscosity, particularly with mechanical atomizers.

(5) Keep the setting tight and free of air leaks.

(6) With the steam type burner, use the least amount of steam required to secure proper atomization.

(7) Keep the oil lines tight, and provide suitable drop pans.

(8) Makeshift substitute oil burners will usually serve only to waste valuable fuel dollars.

62

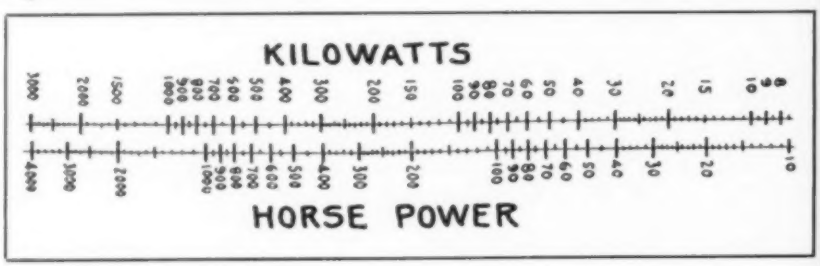
Horse Power and Kilowatts

Brick plant operators are often confronted by a problem involving the relationship between horsepower and kilowatts. The exact figure is one kilowatt is equal to 1.3411 horse power.

That is the figure to use for exact computing. But most of use dislike longhand figuring and most of the time an absolutely accurate figure is not essential. So this scale has been prepared. Just glance across from one scale to the other—and there's the answer. Read the scales in the same way you would read an ordinary thermometer.

For example, how many kilowatts are there in 100 h.p.? Find the 100 in the h.p. column and glance over to the kw column and there is the answer—75 kilowatts. For 10 h.p. you an use the same figure if you wish by knocking off one cipher and the answer will be 7.5 kw. Or in the same way 1 h.p. equals 0.75 kw.

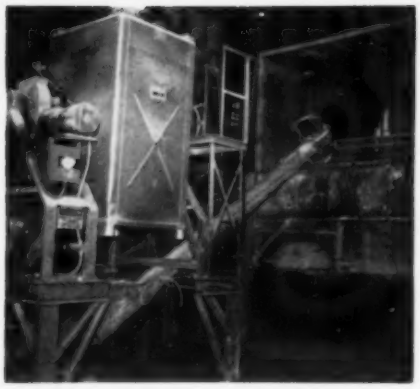
Now do this one: How many h.p. in 1500 kw? The answer, as the scale shows, is 2,000 hp.



63

Hand Crank Starts Transfer Car

The hand crank shown has been devised by Yankee Hill Brick Co., Lincoln, Neb., for starting a loaded tunnel kiln transfer car. The crank shown has enough gear reduction "that a child can start it." Note the counterweighted crank and the truss rod. Yankee Hill reports that the crank works very well.



Dust-Free Handling of Clays

64

For dust-free handling of clays, Johns-Manville at its Zelienople, Pa., plant, uses metal bins for conveying. The bins are carried from one location to another by lift truck, and are in an upright position to receive clay with the spout up. A dust collector is attached to prevent even the smallest amount of dust to escape. For discharging, the bin is inverted as shown in the photograph.

Move Kiln Cars with Payloader

65

Mexico (Mo.) Refractories Co. has found that it can move its kiln cars easily and safely with its Hough Payloader. The vehicle operator pushes the modified 12" fork under the end of the car and raises it slightly to get down pressure on the drive wheels. Cars can also be separated by wedging the fork between the cars. This system delivers a steady push that prevents breakage and spillage often caused by the improper movement of kiln cars.

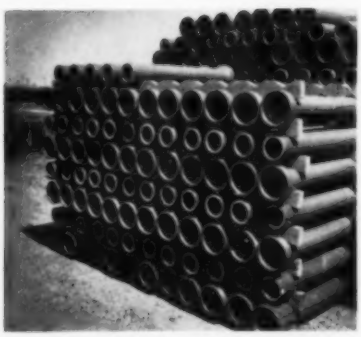
Shoot Brick That Protrude

66

In tunnel kilns, protruding or loose brick may fall on the kiln car tracks and derail the cars or trucks. They also can hook the top tray or layer of brick, insulators, etc., causing a jam, or push them to the floor of the kiln.

To remove the offending brick quickly without unduly damaging the adjacent brick and with no loss of heat is a problem to many operators. Several have shot the protruding brick with a rifle cartridge with excellent results.

Here is how one plant found out how to knock off protruding brick efficiently and inexpensively: They used a 30/30 rifle and a box of soft point cartridges with 150-grain bullets. Using a single cartridge, they take aim so that the bullet lifts the protruding part of the brick. The brick usually breaks off clean as a whistle because the impact was caused by a soft-nose bullet which mushrooms on impact. And no damage is caused to the surrounding brick.



Good Method of Stacking Clay Pipe

67

A hardwood board is notched at proper intervals on both sides so that a pipe can rest in each notch. The boards are then placed on the pipe so that the notches rest on the pipe. The next row of pipe is set into the opposite side notches. The resulting load is very sturdy and can be handled by lift truck.

101 MINUTE MONEY MAKERS

Use Motor Scooter For Plant Work

68

At Alliance Clay Products Co., Alliance, O., a Cushman motor scooter is used to carry messages and small loads from one location to another, saving much footwork and many hours of labor each month. The scooter has a small carrier body to hold whatever load is being carried.

Automatic Salt Glazing In Tunnel Kilns

69

At the W. S. Dickey Clay Manufacturing Co.'s Pittsburg, Kas., plant, salt is fed into the tunnel kiln for salt glazing clay pipe through the special burners. The burners are so built that at regular intervals, a nozzle is thrust forward from the burner and a salt solution is ejected. After completion of the salt solution spray, clean water flushes the ejectors and they recede back into the burner. Gas firing is then resumed. The photo illustrates the apparatus which makes up the salt glazing system. Salt storage is in the center of the photo. Water tank is at right and pumping mechanism at left.

Proper Location of Welding Grounds On Bearing-Equipped Machinery

70

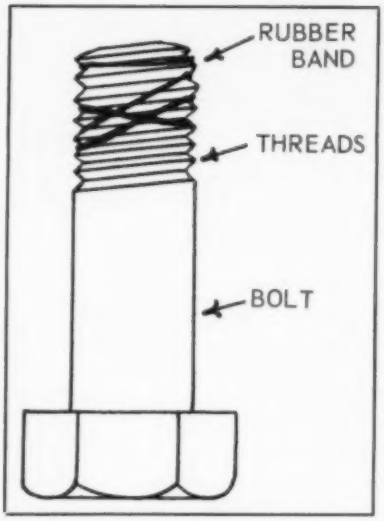
There is not much doubt that the many kinds of welding facilities you all have are the most important tools of repair, maintenance and construction. There is a real potential source of trouble and danger in welding on machines equipped with anti-friction bearings due to improper connection of the ground terminal. There is more than an odds-on chance that there will be arcing and minute pitting on the races of ball and roller bearings if the ground is connected to the base of the machine, and you happen to be welding from the other side of the bearing from a conductivity point of view.

For this reason, always connect the ground to the same side of the machine as you are welding. Good welders sometimes do not know or were never properly taught to take proper precautions in connecting grounds.

Mobile Exhaust Fan For Periodic Kilns

71

Are your dryers not getting enough heat because "cold" kilns are plugged into the waste heat system in order to keep the kilns cool enough to work in? Fans blowing directly on the men in the kiln cause many complaints besides being in the way. A mobile exhaust fan pulling air through the kiln will solve the problem. The fans are also helpful in getting rid of excess waste heat without slowing cooling schedules. Hot air up to 800°F can be pulled out of the kiln and blown straight up in the air. High temperatures can be handled with special alloys.



Use Rubber Bands To Keep Nuts From Coming Off

An ordinary rubber band can be converted into a effective lock nut by following the method indicated in the accompanying sketch.

Wrap the rubber band tightly around the threads of the bolt by stretching the rubber while wrapping. Since the band is endless, it will stay in place nicely.

72

Then, turn the nut on. The rubber band will prevent the nut from working loose much more effectively than will many so-called nut holding devices. The rubber band will very likely be chewed up by the threads when screwed in place, which will usually make no difference because the particles of rubber remaining between the nut and the bolt continue to be elastic even as individual pieces and they will aid in the holding.

Kiln Car Gauge for Tunnel Kilns

73

Just about all plants have gauges to check the over-all size of the ware on tunnel kiln cars, but few check for sagging cars. After shutting down a kiln because of extremely high pusher pressures, one plant superintendent found the trouble to be caused by sand-seal plates in an old sagging car rubbing along the bottom of the sand-seal trough. To keep this from happening again, he mounted simple vertical gauges on the kiln apron. They were located so that the sand-seal plates had to pass directly over them. A cutting torch is kept on hand to trim off the bottom edge of plates that won't clear the gauge.

Multipurpose Vehicle at Refractories Plant

74

At Kaiser Refractories Division's Columbiana, O., plant, this "Trackmobile" performs a variety of duties. Besides spotting railroad cars on either of the company's two rail sidings, the vehicle can also be used for utility towing and pushing. By dropping the pneumatic tired wheels the rail wheels are elevated and the unit can be transferred from track to track with no switching procedure.

Bag Breaker for Efficient Batching

75

One company is using its Payloaders to batch materials. By shaking the bucket, a level amount of material can be had. As part of the process, bags of material are added to the mix. To ease work, the company worked out the sawtooth arrangement shown on the bucket for opening the sacks. The bags open quickly and the material falls into the bucket. The sawtooth opener doesn't interfere at all with loading the loose material used in addition to the bagged product.

101 MINUTE MONEY MAKERS

Correct Your Die Adjustments Easily

76

How to detect incorrect die adjustments: (1) Cracks caused by the core bridge can be determined because they always appear in the same place in the ware where the bridge cuts the column. To correct, set the bridge back or use a corrugated bridge.

(2) Warping and wearing of the column from the die might be due to propellor wing effect on pressure. Increase the distance from the auger to the die. Vertical core bridges may emphasize weaving.

(3) Tearing of column corners may be due to poor lubrication or incorrect die taper.

Turns Waste Culls into Usable Gravel

77

The problem of what to do with bottom brick and waste culls that accumulate around a plant has been solved by Pine Hall Brick Co., Pine Hall, N. C. An old Gruendler gas powered jaw crusher was bought, and modified, and now the company makes its own gravel for its own use. Dump hoppers are placed around the loading area in the plant and all the culls are thrown into these hoppers. When they are full, they are carried to the crusher and ground up into half-inch "gravel."

The gravel is used on roads around the plant and for an aggregate in concrete work. The latest use for it is linings of cesspools.

What Is the Diameter of That Small Wire?

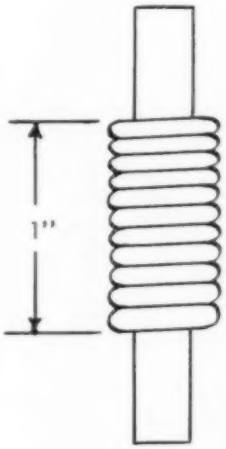
78

You needn't be stumped by the question above. This sketch shows how easy it is to measure the diameter of a small wire with an ordinary scale or ruler.

Wind the wire on a round stick or rod as shown, so that all of the wire turns make contact throughout. That is, there must not be any gaps between the turns.

Count the number of turns per inch and divide into one. Thus if there are 16 turns per inch, the diameter of the wire is 1/16″ or 0.0625″. If there are 50 turns per inch, the diameter is 1/50″ or 0.02″.

And so on. It is a surprisingly accurate method in which to measure the diameter of a small wire without using an expensive micrometer caliper.



Try An Automatic Feed for Dry Pan

79

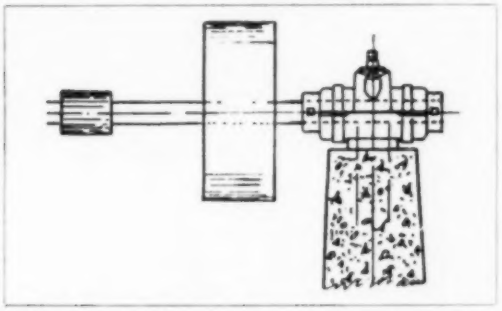
An automatic feed for your dry pan will increase efficiency and may be accomplished with a simple microswitch. A paddle riding on top of the material in the pan raises and lowers according to the amount of material in the pan. When the paddle rises to a preset point it trips the switch and shuts the feed off. As the pan empties the paddle arm lowers and the feed is turned on again.

This system eliminates manual control of the dry pan feeder. Efficiency will be increased because of the more uniform load in the pan. In some instances an electric clutch on the feeder may be required to complete the installation.

80

One Solution To Transmission Problems

Due to carelessness or lack of thought on the matter, many users of pulleys and shafts install pulleys incorrectly; in the manner shown in the accompanying sketch. This sketch may look all right at first glance but it does not shown good practice.



The pulley is too far away from the bearing. As can be seen, the pulley could be moved over on the shaft toward the right to a point where it would receive rigid support from the bearing.

When a pulley is not located near a supporting bearing it is obvious that when the belt is placed on the pulley and the drive is fully loaded, the shaft will be deflected, the amount of deflection depending on the tension in the belt and the strength of the shaft. It is also obvious that a stronger and more costly shaft will be necessary to hold the pulley in alignment when in the position shown in the sketch than would be necessary if the pulley were closer to the pillow block.

Pulley position, as illustrated, and shaft weakness are commonly the cause of sufficient pulley misalignment to cause the belt to jump off the pulley continuously. The operator wonders why. He stops the machinery, checks the alignment, and finds everything to be OK. The pulley *is* in alignment when the belt is off and not pulling, but it can be badly out of alignment when under full load.

Another kink: By using a ball bearing instead of a plain bearing, the operator can place the pulley still closer to the center of the bearing and thus use a shaft that is smaller and less costly. The distance from the center of the bearing to the center of the pulley is the distance that counts. Make this distance as short as possible.

81

Monorails for Die Changing

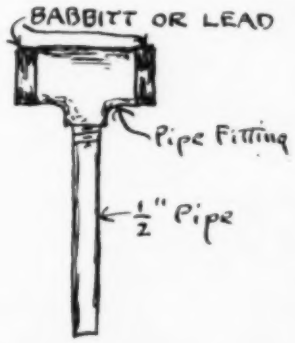
Dies, cutter reels and other heavy equipment can be moved rapidly and easily with an overhead monorail conveyor equipped with a chain hoist. The overhead conveyor takes very little space and is out of the way of other operations. A die, for example, can be taken from the brick machine and moved directly to the storage area. There are no extra pickups required and no need to move dryer or kiln cars out of the way.

82

How You Can Easily Make A Good "Soft Hammer"

A useful and easily made soft hammer for use in and around the plant is shown in the accompanying sketch. It is nothing more or less than an ordinary standard "tee" pipe fitting and a half-inch pipe. The former, when filled with lead or babbit metal, serves as the hammer head, while the latter serves as a handle.

To pour the metal, molds are unnecessary. Simply wrap paper around the rim to form the face of the hammer and to keep the lead from spilling when the metal is poured. Nor is it necessary to fill the tee entirely full of molded metal; it may be filled mostly with pieces of scrap metal or anything noncombustible to fill the space. Scrap pipe plugs, for instance, are excellent fillers.



This type of hammer can be made in almost any desired weight because there are so many standard sizes of pipe fittings. The one illustrated weights about four pounds. For striking and driving bolts, nuts, shafts, pipe and similar machinery parts that must not be scratched or battered there is nothing better than soft lead or similar soft metal for the face of the hammer. Rawhide-faced hammers and wooden hammers do not scratch or batter but they are often not heavy enough for the quick and positive performance demanded.

101 MINUTE MONEY MAKERS

How to Remove Oil from Brick

83

An effective way to remove oil from fired brick is to take raw clay, mix it with benzine and apply it to the stained brick as a form of poultice. One operator did this where a load of brick accidentally picked up oil and grease while being shipped to a construction job. A little benzine sprayed on the stained brick before applying the poultice is also beneficial. About 45 minutes after the poultice is applied, all the oil or grease is pulled out of the brick, leaving a completely cleaned brick.

No trouble was experienced in removing the poultice and no raw clay stuck to the brick.

Plastic Prevents Brick from Drying on Cars

84

At the new Gleason, Tenn., plant of Gleason Clay Products Co., sheets of plastic are put over the ends of cars going into green storage. This plastic deters shrinkage from taking place which would result in the ends of the cars' leaning and perhaps falling. The plastic is placed over the ends of the cars at the end of every day's operation before the car is moved into green storage.

Lift Truck Towed to Construction Site

85

The Phoenix Brick Co. in Arizona delivers its packaged brick to the construction site along with provisions for unloading the brick to any place the contractor desires. The company built a trailer upon which the lift truck is parked and then towed to the job site. This is especially valuable to the company, when the contractor on the job site has no means of unloading packaged brick.

86

How To Figure Motor Sizes

To determine the size of electric motor needed for a given job, the following formula may be used:

$$\frac{\text{HP Output Required}}{\text{ME x PF x LE}} = \text{size of motor needed}$$

Where HP Output Required is the power required to move the loaded machine; ME is the motor efficiency; PF equals power factor; LE is the line efficiency, or voltage output, divided by voltage input.

For example, an electric motor is required to operate a shale planer which when under load puts a demand of 50 horsepower on the power source. Power at the plant's connection to a nearby public power line is 440 volts, but due to the resistance of the No. 2 wire used to span the 2,000 foot distance to the shale planer, the power at the motor is only 410 volts. With a motor of 85% efficiency, in a plant where the power factor is 85%, it can be calculated by substitution in the formula that a 75-hp motor is needed:

$$\frac{50}{.85 \text{ x } .85 \text{ x } 410/440} = 74.6 \text{ HP}$$

Kiln Car Repair Station Uses Lift

87

At the Hammond-Baton Rouge Brick Co., Hammond, La., a hydraulic lift, similar to those in use in service stations, is used at the kiln car repair station. The lift is very versatile and allows the maximum of freedom working underneath the car. The wheels are completely accessible and a man can very easily change all four of them in a matter of minutes.

School Slates For Dryer Performance Recording

88

Installing simple elementary school-type slates and handy chalk containers at the entrance of each of four dryers has considerably cut down on errors and misunderstandings in everyday production of sewer pipe at Denver Brick & Pipe Co., Denver, Colo.

The 7 x 9-inch slates are simply supported on the jamb of the doorway into each of the big humidified dryers, where complete details on each load of pipe spotted for drying, removal time and other details are scribbled as the kilns are loaded. Easily wiped clean with a damp cloth, the slates provide a permanent, readable point for information and instructions which is far superior to easily lost or damaged paper sheets, which were used in the past.

Conveyor Drying Rack Cuts Costs

89

Cutting handling costs in flower pot production is accomplished by this overhead conveyor drying rack. This tramrail accumulates its loads in the racks behind all the presses. The ware is then pushed into dryers in a continuous drying process. One man handles the entire drying operation in the entire plant.

Pregrinding the Clay Before Storage

90

A shredder on the end of a Steele No. 50 straight line pug mill is in use at the Crumpler Brick and Tile Co., Roseboro, N. C. As the clay is brought into the plant from the pit it is dumped into a feeder which feeds the material to the pug mill. A belt conveyor takes the preshredded material to a covered stockpile. Advantages of preshredding the clay before stockpiling include the faster drying of the clay in the pile, a more uniform distribution of moisture in the pile and a more uniform blending of clays from the clay pit.

101 MINUTE MONEY MAKERS

Prevent Discoloration of Buff Brick

91

If buff brick turn brown or yellow on exposure to weather, try this:

(1) Fire harder.

(2) Use ½% of fluospar or cryolite in the clay body.

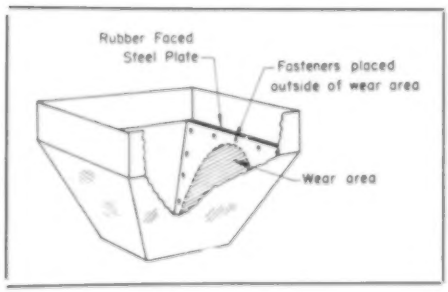
(3) Do not allow the brick to be stacked in the open so that the straw separating the brick in the pile becames wet. The brick absorbs the tannic acid which gives a brown scum on the face. This is especially true with smooth buff brick.

(4) Dip the fired product as it comes from the kiln in 1.5% solution of potassium carbonate.

Scrap Return Uses Off-Bearing Belt

92

Albion (Ill.) Brick Co. worked out a simple and effective use of the same belt for both off-bearing and scrap return. The device is a simple trough arrangement mounted at the end of the off-bearing belt. Scrap is diverted by an angular strip across the belt; the scrap then falls into the trough alongside the belt and then to the top side of the belt underneath the off-bearing line. The belt is turned frequently to insure uniform wear, with very little extra wear reported as a result of the double use of the belt.



Protect Your Hoppers

93

Wear in hoppers usually comes from the material falling into the hopper rather than from material flowing out of the hopper. Therefore, the major wear is generally around the center of the side the material falls on. The life of the hopper can be extended considerably if rubber faced steel plate is attached to the wear side by bolts placed outside the wear area along the top and down the sides of the plate.

Straightening Out Crooked Cuts

94

Colors, textures and finishes have become more and more important in the promotion and sale of structural clay products, but in some of the newer plants especially the extra space needed between the die and off-bearing conveyor creates a potential danger that may warrent careful examination in your plant. The fact is that there is a considerable back pressure created by pushing the column over long sliding plates, and even free-running unpowered conveyors can be the cause of crooked cuts that cannot be blamed on dies and cutters.

Anything you can do to reduce this kind of back pressure will make the whole cutting process accurate and reliable.

95

Protective Pads For Handling Brick

Inexpensive pads to protect workers' hands when handling burned brick can be cut from old inner tubes, as shown in the sketch. A pair of slits is cut through the index and little finger positions to form bands to hold the pad on. A single band holds the thumb pad on. Heavy truck tube rubber is more durable, and pads cut from it will last long enough to handle 100 to 150 thousand brick.

96

Centrifugal Pumps—Kinks As Well as Troubles

A correspondent writes that every time they start a centrifugal pump in their plant they are obliged to prime the pump. He states that the pump does not operate as well as it once did and he would like to know what is the matter with it.

Pump priming is not at all uncommon with centrifugal pumps. Even where foot valves are installed in the suction pipe for the purpose of holding the water in the pipe when the pump ceases to operate, air may get in and permit the water to drop. Sometimes foreign objects—pebbles, dirt, sticks, etc.—manage to get caught in foot valves, holding them open, and when that happens the purpose of the foot valve is defeated.

If air leaks into the suction line, as already stated, it is quite possible that all of the water will be drained out and the pipe will be filled with air instead of water. Air leakage is further a "bad thing" in that it reduces the capacity of a pump, which may be one of the reasons why the above pump is not operating as well as it once did even after it is primed and operating. In some instances the air carrying ability of water is utilized where the pressure of the system is maintained pneumatically. Air is then purposely admitted into the suction, in small amounts, and continued until the pressure tank contains sufficient air.

Again, if the water being pumped is "too hot," similar trouble will be experienced. When it is too hot, steam will be generated in the suction pipe due to the reduced pressure. Thus, for example, if the temperature of the water being pumped is 212 deg. F. it cannot be pumped "by suction" at all. It will be necessary to submerge the pump in water of that temperature in order to pump it. If the temperature of the water is, say, 183 deg. F., the maximum lift is 15.4 ft. If the temperature is 170 deg. F. the maximum lift is 20 ft. And so on.

In some instances it is possible to increase the capacity of a centifugal pump by changing impellers. Let us say, for instance, that you buy a pump for handling a given quantity of water against a given head at best efficiency. An impeller in that same pump which will handle more water will give a lower efficiency, so, the thing to do is to use the "smaller" impeller. Then, when the time comes to pump the greater quantity of water the "larger" impeller is installed and it, in turn, handles that quantity of water at best efficiency.

Noise Reduced by Dual Mufflers

97

Noises from certain off-the-road equipment may be objectionable in special areas. One operator solved this problem by installing dual mufflers on his machine, saying that the extra muffler reduced exhaust noise considerably. Another solution to this problem would be the installation of a combination exhaust manifold and muffler. Shown in the photo is a Tournatractor with a dual muffler installation.

(Continued on page 106)

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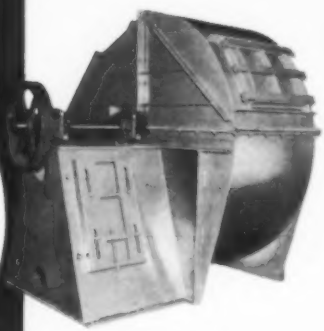

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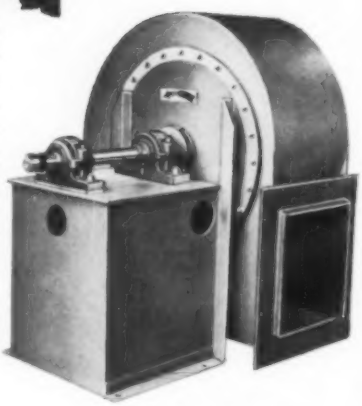

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Circle Service No. 63

MINUTE MONEY MAKERS

(*Continued from page* 105)

98

Give Your Wire Rope A Long Life Line

Wire rope, which appears to be a simple combination of solid steel wire for strength and ordinary hemp rope for flexibility, is actually a very complex machine. Its many moving parts require precise engineering in its design and skill and care in its manufacture. Individual wires in a wire rope are subjected to combinations of stresses which include tension, compression, torsion, shear, and fatigue.

Each wire bears on adjacent wires at points which, theoretically a line contact, is actually deformed, creating high bearing pressure and friction. Unless wire rope is properly lubricated, this high pressure and friction tends to reduce the effective life of the rope.

The ideal lubricant should reduce friction between wires and strands, permitting free movement and prevent corrosion of the steel as well as protect, preserve the hemp core.

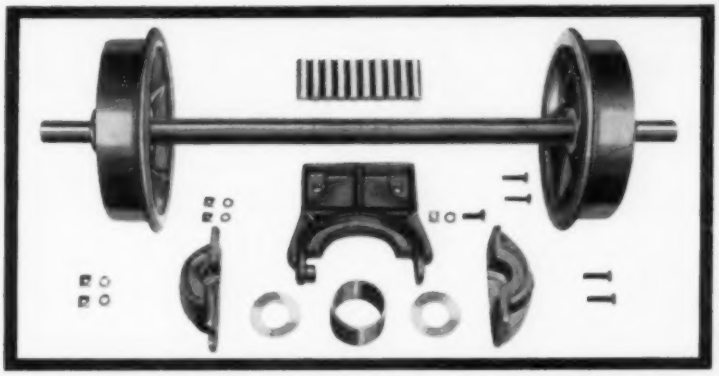
Two lubrication steps are necessary to reduce friction and corrosion to a minimum and to improve core preservation and protection. First is the application of the most suitable lubricant during the wire rope's manufacture. This, of course, is in the hands of the manufacturer, but reliable manufacturers have determined the best lubricant for this purpose through research and experience.

Wire ropes in the field need to be relubricated periodically. A hemp core in a wire rope in service will gradually dry out if its lubricant content is not replenished, disintegrating and causing rope collapse.

For best results, wire rope should be cleaned with wire brushes and kerosene, paying particular attention to the valleys between the strands and the space between outer wires. Steam should never be used to clean wire rope.

In general, the best lubricant to use for relubricating wire rope in the field is the same type used on the rope during manufacture. How-

(*Continued on page* 109)



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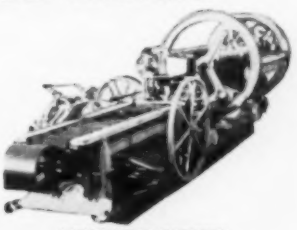

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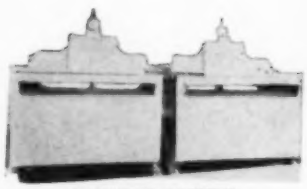

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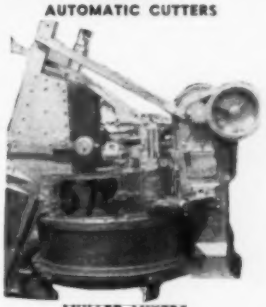

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MINUTE MONEY MAKERS

(*Continued from page* 106)

ever. due to the heavy bodied nature of these lubricants, it is extremely difficult to apply them in the manner in which they should be applied; by heating them to a temperature that will make them sufficiently fluid to penetrate to the core of a wire rope. The arrangements of the rope on equipment render this application nearly impossible.

If facilities are available for heating the lubricant, and the rope is arranged so that it can pass through a bath of hot lubricant, effective lubrication can be secured.

However, a good field expedient is to dilute the lubricant with a volatile solvent and apply it to the rope by dripping or brushing.

An extreme pressure-type grease may be applied by means of a paddle or brush to the outer surfaces of the wire rope, but this only affords surface protection. A light engine oil will penetrate to the core, but affords no protection to the outer surface. These methods should be used only if the recommended method is not practical. They are merely field expedients, and work on rope whose service life is only a few weeks or months.

However, for a rope whose service life is expected to cover a period of years, proper lubrication is a must.

99

How to Repair A Conveyor Belt

In order to get the maximum service life out of conveyor belting, users should take particular care to repair all belt damage as soon as it is discovered.

Belt fabric exposed to weather will absorb moisture if the protective cover becomes damaged, and may even become soaked. In warm weather, this condition leads to mildew and rot; in winter, ice crystals may gnaw at the fabric from within as the belt flexes. Thus, immediate repairs not only prevent the spread of damage, with its threat of premature failure, but also keep out the water which is the

(*Continued on page* 111)

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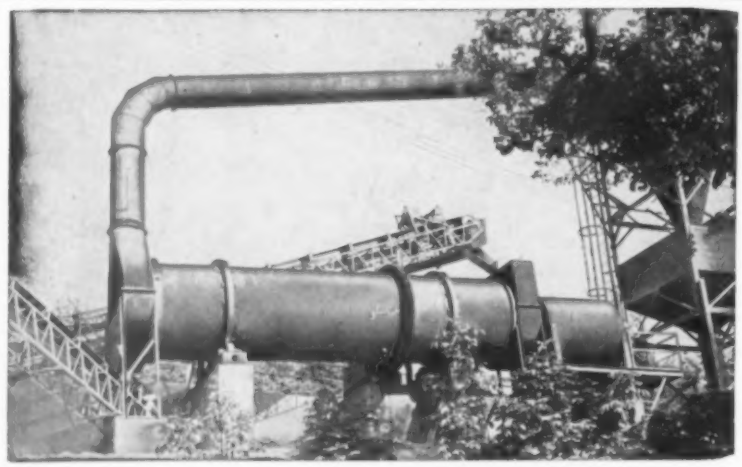

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MINUTE MONEY MAKERS

(*Continued from page* 109)

natural enemy of the conveyor belt carcass.

Simple tools and procedures will help the maintenance man to give belting proper attention. An adequate repair kit includes a sharp cobbler's knife and a stone to keep it sharp, a supply of emery cloth, rubber cement, inner tube patching rubber, rip plates and standard belt fasteners and accessories, together with rags and gasoline for cleaning. As each belt is installed, remnants should be saved, because they will prove useful in subsequent repairs.

To mend long and deep cuts which go through to the fabric, open the cut, clean out all the dirt, and cement the cut closed, allowing the cement to dry thoroughly before the belt is restored to service. Where bits of torn cover leave exposed spots with only slight damage to the fabric, remove the loose ears of cover stock by carefully cutting a curved and bevel-edged area around the spot; then sand the edges, apply the patch flush with the belt cover.

Where gouges have penetrated the belt, or longitudinal rips have occurred, these points must be cleaned, sanded, cemented and reinforced with rip plates at three-inch intervals. Transverse rips require similar treatment with standard belt fasteners instead of rip plates. Use rip plates on longitudinal rips only, and standard fasteners on transverse rips only. When holes in the belting do not permit the simple use of rip plates and fasteners, cut out the hole into the smallest possible rectangle with its sides parallel to and at right angles to the belt edges.

Then, from belting remnants, cut an exact fit for the hole and insert the piece, fastening it with belt fasteners all around the patch. Cement all edges thoroughly. Where it is necessary to prevent seepage of fines through belt repairs, remove one ply of fabric from a belt remnant and put it under fasteners and rip plates.

100

How To Select A High-Temp Belt

Selection of a rubber conveyor belt for high-temperature applica-

(*Continued on page* 112)

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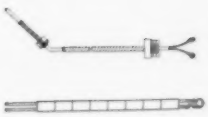

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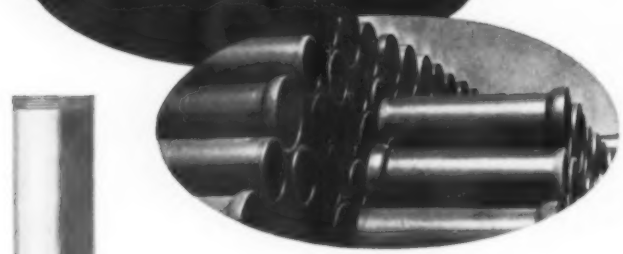

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MINUTE MONEY MAKERS

(*Continued from page* 111)

tion should be approached with caution. Belts designed to give economical service in high temperatures are more expensive than standard belts. Premium priced belts require premium priced engineering in selection, installation and maintenance. Because of the severity of certain heat applications, standard belts often prove more economical on a cost per ton basis.

The basic fact faced in making and using belts for high-temperature application is that organic materials such as rubber and cotton char at 350°F. It takes special compounding to carry material even at 250°F. When you go above 250°F., inorganic materials such as glass fabrics, asbestos and metals must be used for the carcass. A premium-priced belt is the result.

Protecting the carrying side from severe loading impact and the return side from conveying spillage under the tail pulley are important factors in extending the life of standard belts and must be watched even more carefully in the case of a high-temperature belt.

Here are some of the steps which are taken to improve resistance to heat. Heat speeds up oxidation so more anti-oxidants are added to the belt compounds. Sulphur embrittles, so sulphur content is kept as low as possible. Heat-resistant plasticizers go into high temperature covers to aid flexibility by counteracting embrittlement.

The carcass is made of standard cotton duck for temperatures of 250°F.—300°F. Above that glass, asbestos and other special fabrics are used.

In cases where the special premium-priced belt is unavoidable for high-temperature work, working life is favored if the belt can be run hot at all times. A belt which is hot 24 hours a day will last longer than one which runs eight or sixteen hours, cools off and is then heated again.

Here is an example of what was recommended to a foundry using a "hot" belt. Small and large castings were involved. The hot castings were shaken out on a screen, the discharge from which fell onto the belt. Hot sand, large pieces of hot cores and hot core pins caused uneconomic.

rapid deterioration. It was suggested that the fine sand be deposited on the belt first to form a cushion for the larger pieces of hot core. The hot core pins, instead of falling free onto the belt, were directed against a metal baffle which not only lowered their velocity, but more frequently caused them to fall lengthwise than end-first on the belt.

The use of metallic fasteners should be avoided in high-temperature work. Steel or other metals will conduct heat to the carcass and cause its premature failure at the joint. Vulcanized joints are preferable for hot belts.

101

Bin Shape Factor in Materials Segregation

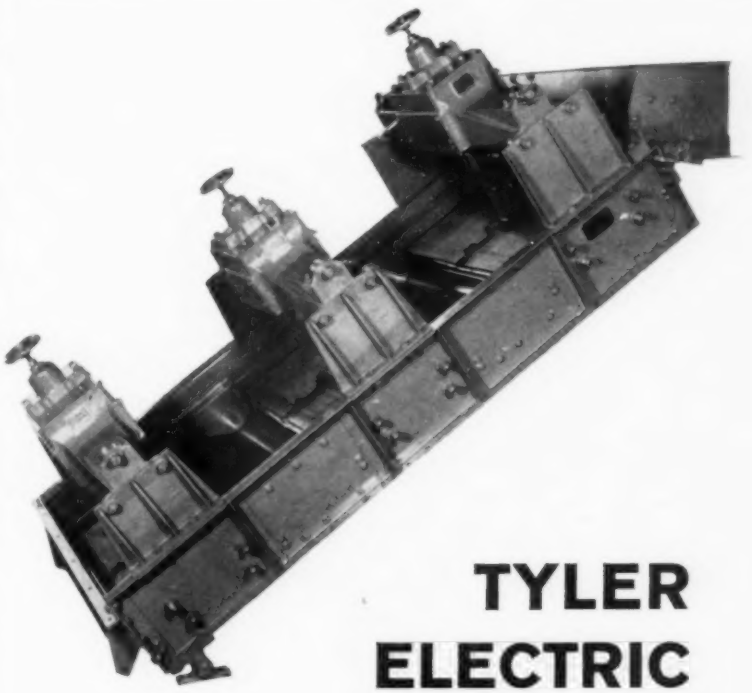
When stockpiling ground materials which have an appreciable range of particle sizes, the material cones up and coarse particles run down the sides of the pile, leaving the fines in the center. Result is that when exhausting the bin, there is first a run of fine material, then average material and finally a run of coarse particles from the bin. As G. A. Sellers, vice president of Plibrico Co., Chicago, Ill., says, "The most obvious solution to this problem is to fractionate the material into different sizes and recombine them in a final mixing operation." But this is costly, Sellers points out, and often not possible due to the lack of facilities for flexibility in the operation.

One important item in preventing segragation is the shape of the bin, Sellers asserts. Regardless of whether it is round or square it should be at least about twice as high as it is in width or diameter. A bin shaped this way will cause the material to travel a minimum in a sidewise direction, preventing segregation in large part. The bin should be kept as full as possible all the time. Plibrico has found, Sellers said, that this minimizes sidewise flow because most of the material is moved straight down.

Sellers pointed out that materials should be as uniformly distributed as possible when the bin is being filled. A revolving spout will accomplish this, turning it to a different position every few minutes. A cone can be used to split the material in all directions and spread it to the sides of the bin.

Bins, Sellers says, should be hoppered to a central take-off. Plibrico personnel believe that a gradual hoppering—at a 60° angle is better than a fast one at 45° or less. At the Pilbrico plant, Sellers reported, they have one bin with a tube over the outlet, running up the center of the bin almost to the stop. Staggered openings are cut all around the tube clear up its surface. The theory is that when material is drawn, it comes down this center pipe, which has drawn—through the cut "ports"—material from all levels of the bin therefore averaging out segregation.

Another technique for alleviating segregations, but not one to use during conditions which would allow freezing, Sellers points out, is the wetting of grogs to a damp consistency with a water spray as it enters the bin. This causes the fines to cling to the coarser particles. But there are some processes, Sellers pointed out, where wetting down the ground material might not be good.



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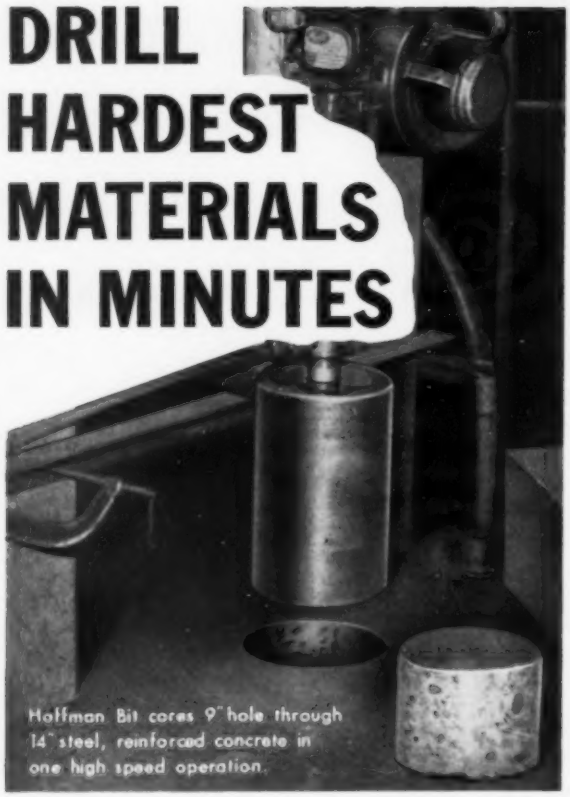

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4	19	34	49	64	79	94	109	124	139	154	169	184	199	214
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11	26	41	56	71	86	101	116	131	146	161	176	191	206	221
12	27	42	57	72	87	102	117	132	147	162	177	192	207	222
13	28	43	58	73	88	103	118	133	148	163	178	193	208	223
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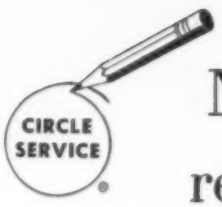

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Lightweight Aggregate . . .

(*Continued from page 73*)

thing uniform into building codes relative to lightweight structural concrete it has to be something closely related to procedures for normal weight concrete. He noted that 75 lightweight beams were analyzed by a statistical method to arrive at constants and to find minimum values. "Code provisions for ultimate load design criteria should be established at the earliest opportunity," Hanson said.

Sintering in Europe

"Sintering Plants in Europe" was the topic of Lucas E. Pfeiffenberger, of Alpena, Mich., technical consultant for the association. He reviewed observations and showed color slides of visits made last year to sinter plants in Europe. These included Lytag Ltd., of London, England, an installation sintering fly ash at the Northfleet Power Station; the Hollith Groudstoffen Maatschappij of Stein/Limburg in the Netherlands, an installation sintering a coal refuse on a uniquely designed circular sintering machine, and the Rohrbach Cement Co. of Dotternhausen (Wurttemburg) Germany, where two straight line sintering machines are being used to manufacture portland cement clinker.

Following lunch on Thursday, a panel discussion on new and more versatile applications of expanded clay and shale lightweight concretes was chaired by B. K. Powers, chairman of the Technical Problems Committee. Powers said that the outlook for 1961 and beyond indicates "increased acceptance and wider use of lightweight concrete." In noting that l.w. aggregates accounted for better than 10 per cent of the total clays produced in 1960, he pointed out that prices held the line with only one l.w. aggregate producer known to have raised prices. Melvin Cruzen, of Beslite, reported that a brick producer in Detroit made brick using his firm's aggregate utilizing a dry-press brick machine with a local Detroit plastic clay and binder. No stickiness developed and the brick handled very well.

A discussion of the l.w. clay block resulted in general agreement that the clay block will require plenty of "sell"

(*Please turn page*)

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simply because it is new but that its future is bright. "We are on the threshold of a new industry," said Powers. An entirely new field promises to open up for l.w. aggregate not only in clay blocks but in the ceramic field. As to advantages of the clay block, they were listed as these: (1) Lighter in weight; (2) variety of textures; (3) variety of colors; (4) block can be glazed; (5) block can be made at a lower price, probably; (6) less shrinkage occurs.

Powers said architects are concerned with the shrinkage problem, and are specifying high pressure cured blocks as a result. Tensile strengths are usually greatly improved over ordinary blocks at the same comprehensive strengths. L.w. aggregate is finding growing favor for refractory linings, and in bituminous concrete, it was noted. In Tennessee, an intersection of test paving has been assigned for l.w. aggregate bituminous concrete and results to date are very encouraging. In low-cost housing, l.w. aggregate is being used for slab work instead of gravel. It is also being specified in greater volume for septic tanks and industrial roofing.

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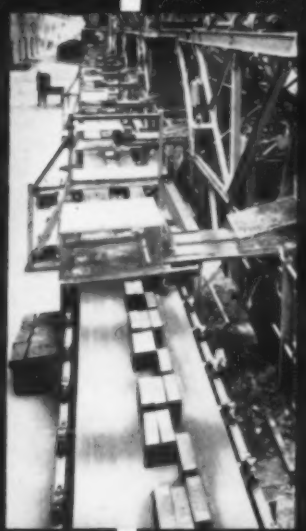

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Waste Heat Recovery

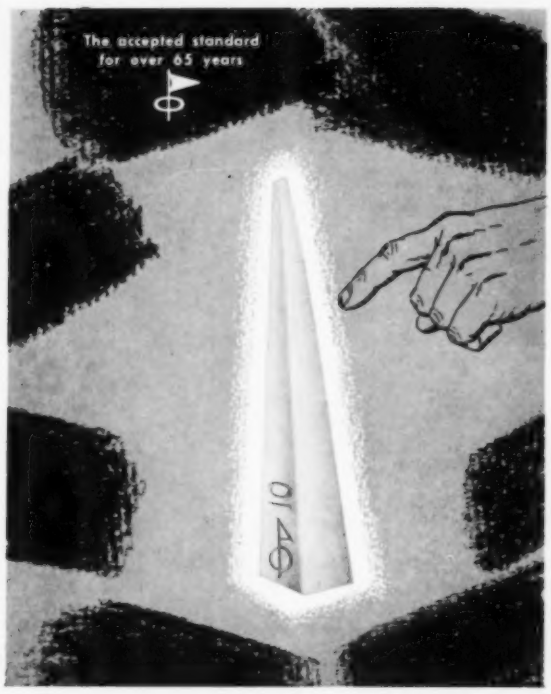
"Waste Heat Recovery—A Means to Air Pollution Control" was the theme of a paper by Joseph Waitkus, manager of sales development, The Air Preheater Corp., Wellsville, N.Y., at the second day's session. Mr. Waitkus noted that the focusing of attention by legislative bodies and engineering groups on the control of air pollution is creating, for many industries, some serious economic problems in the effort to justify the expense of the control equipment and its operation. He pointed out the various methods for offsetting all or a major part of the expense through means of recovering and utilizing the heat wasted in the process, which is subsequently directed to saving fuel or to improving the process in some respect while at the same time benefiting the entire economics of the process operation and achieving pollution control.

"Equipment and Problems in Manufacturing Lightweight Clay Products" was discussed by David O. Anderson, ceramic engineer, of the Swindell-Dressler Corp., Pittsburgh. He discussed various approaches to the operations of forming, drying and firing lightweight clay uints. He reviewed certain development problems facing the industry at this time. He expressed the belief that the lightweight clay block has excellent prospects for growth in the future, but will require a broad-based program of research and promotion. The clay block will most probably use lightweight expanded clay and shale, he said, because this is a "natural" outlet.

View Architecture

A film, "The New Age of Architecture," a documentary movie produced by Fortune Films, concluded the Friday morning session. In the afternoon, a panel discussion was led by Shalite's Mr. Groves on the subject of percentage depletion allowances currently up for study and examination in light of recent high court decisions and federal policy rulings.

(*Continued on page* 120)



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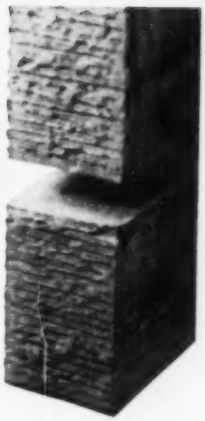

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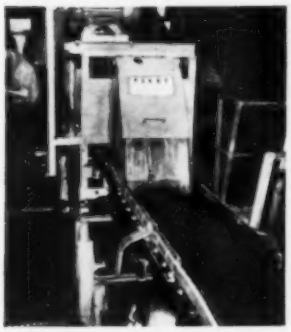

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(*Continued from page* 118)

T. R. Berger, executive secretary, in his report to the board of directors, said that interest in l.w. expanded clay and shale aggregates was "greater than ever." Despite some soft spots in the economy, the industry as a whole is expecting to show a substantial increase in production in 1961, he said. He called for continued research into new fields of use for lightweight aggregates. The election of new officers followed the report of a nominating committee headed by R. A. Utiger, Denver, Colo., a past president who is vice-president of Cinder Concrete Products Co. ("Clalite"). Mr. Karl, Lehigh Materials Co., is the new chairman of the Technical Problems Committee, succeeding Powers.

Introduction . . .

(*Continued from page* 75)

agers in the group had encouraged work on the lightweight block in their plants.

Several suggestions were offered to the people attending the conference. First, it was suggested by Svec that the aggregate for use in the block be bought, rather than the individual producer trying to make the aggregate himself. He pointed out that there are more than 70 plants throughout the country making lightweight clay aggregate and it is available at almost any geographical location. Since quite a big investment is required to make a profitable lightweight clay aggregate, the existing suppliers can probably make it much cheaper and better than if the block producer were to start from scratch. Advantages of buying the aggregate are obvious in that new aggregates can be tried as they are developed.

Svec pointed out that the block can be made by several methods, with five presses to choose from, all of which have been successful, certainly one of the five should be suitable for each one in the industry.

Svec also pointed out that not too much emphasis should be placed on making a lightweight clay unit to start. The problems of making a large clay unit should first be overcome and as the manufacturing process is refined, additional work should be started on making the unit lightweight.

Drying and firing were also discussed. It was pointed out that not

(*Continued on page* 122)

get the proper perspective on storing refractory materials

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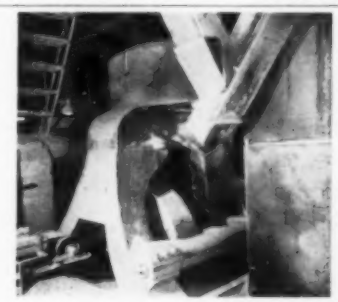

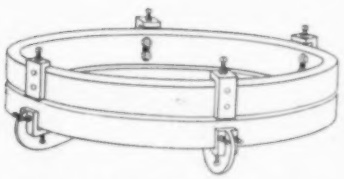

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Eagle Grinder users report twice the output of 9' dry pans. No screen plates to clog or wear. Higher speeds facilitate rapid removal of ground material through rim slot discharge reducing power consumption. Pan rim discharge slot easily adjusted to control material size or to compensate for wear. Handles wetter material. Better for tough shales. Takes less space. Get facts—send for Bulletin 754.

SINCE 1872
EIW
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EAGLE IRON WORKS
131 Holcomb Ave., Des Moines, Iowa
Grinders • Dry & Wet Pans • Shale Planers

Circle Service No. 97

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LONG-WEARING TUFHORSE MITTENS AND PADS GIVE EXTRA PROTECTION

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Des Moines, Iowa

Increase the output of your men. Protect their hands with Tufhorse hand pads, gloves or mittens. Made of heavy, durable cowhide, Tufhorse Kant Rips are flexible, tough, help men work faster.

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Please send free sample of your (.....) hand pad, (.....) glove, (.....) mitten for testing. (Specify which one you want).

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Forney's, Incorporated are pioneers in the design and manufacture of plant, job site and laboratory testing equipment for concrete and concrete products.

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Forney's, Incorporated is the only concrete testing equipment and apparatus manufacturer specializing in the construction industry.

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Tester Division
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Circle Service No. 84

too many problems exist in the drying and firing of these products as proven by much of the research work done. There are new ideas in kiln design that will fire the block in less than 10 hours and dry the block in about two hours.

Svec stressed the need for industry cooperation in making this product and mentioned that through unity we can get a head start on rejuvenating the clay products industry.

Firing Clay Block . . .

(*Continued from page* 77)

minute as they are, associated with the drying and firing of clay block. The big problem in producing this unit is that the present dryers and kilns are not set up to fire on a rapid schedule. One of the big problems in using a tunnel kiln for firing is that to date some of the test block have not been able to be set more than two or three units high, creating a lot of waste space inside the tunnel kiln.

Anderson then described the experimental kiln now being developed by the Swindell-Dressler Corp. which is designed specifically for burning the clay block. The unit is one which was developed at Alfred University by the Ceramic Department and consists basically of a roller hearth furnace. The block in this unit can be fired individually on a very rapid schedule or it is possible to set them two high if necessary.

Anderson spoke about a completely automatic plant for the manufacture of clay block. The plant would produce 37,500 block per week. Two machines, working eight hours a day, five days a week would automatically produce enough for the 7-day dryer and kiln operation. Only a single man is required to supervise the operation and the control batching for these machines. Anderson then described the dryer which the company designed which operates continuously on a 6-hour cycle to condition the block for firing in the tunnel kiln.

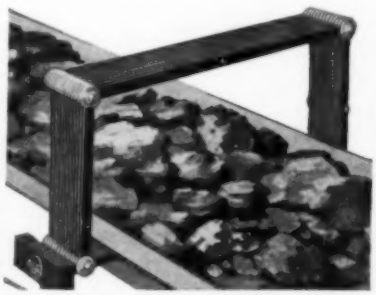
In this basic plant which Dressler has designed, a tunnel kiln is utilized. The kiln holds 16 cars of loaded ware and boasts a high concentration of firing power, coupled with maximum recirculation and rapid cooling to hold the desired curve on a rapid

(*Continued on page* 124)

Keep tramp metal from damaging costly hammermills ...with the RCA ELECTRONIC METAL DETECTOR

Manganese steel dipper teeth, drill bits, castings and broken machine parts that might cause damage to secondary crushers, and other critical equipment, are automatically discovered by the RCA Electronic Metal Detector. Designed for heavy-duty service, to withstand dust and moisture.

Easily installed on existing conveyors, this electronic detector is always on the job, probing out all kinds of tramp metal, both magnetic and non-magnetic which can cause downtime and repairs. Prevent tramp metal losses at once! Write to RCA, Dept. S-407, Building 15-1, Camden, N. J.



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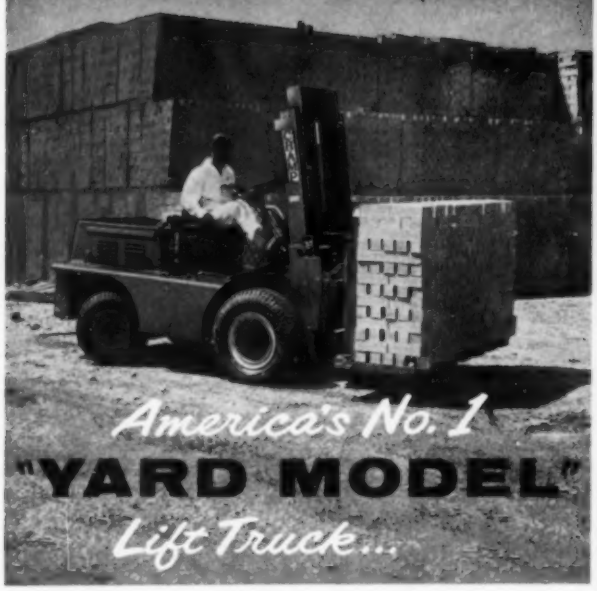
CHAMP TL-50

CAPACITY: 4,500 lbs.; 5,000 lbs. and 8,500 lbs.



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Result: The TL-50 delivers unequaled performance with Proven Lowest Maintenance and Proven Highest Retained Value. Write today for full information.

America's No. 1 Towable Lift Truck...

You can DRIVE or TOW the Champ from job to job. No costly trailer required. It's fast and easy.

CHAMP CORPORATION

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ORGANIC BINDERS

GLUTRIN

(liquid)

or

GOULAC

(powder)

Especially suitable for increasing the molding and dry strength of

- **BRICK**
- **CLAY REFRACTORIES**
- **NON-CLAY REFRACTORIES**
- **SILICA REFRACTORIES**
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Small amounts required—easy to use. Economical and larger production of first quality product absorbs the investment many times.

Many successful users. We'll be glad to submit samples and our suggestion on procedures and amount needed.

Robeson Process Company

P.O. Box 960 ● Erie, Pa.

Plant - Johnsonburg, Pa.

Circle Service No. 87

schedule. The entire plant is automatic with the exception of the racking of the block onto the kiln cars. The rack loading is automatic and the rack unloading is also automatic. Cubing of the block after firing may be manual to begin with and automatic later.

L. B. Coffin told of the experimental roller hearth kiln now in use at the college. Much success has been achieved with this and it would very well be adaptable for the firing of clay block.

Roy Moffitt, who performed basic research work on the Statesville Brick Co.'s new plant in North Carolina, then spoke on some of the aspects of firing. Questioned as to whether or not the block should be laid on its side, with core holes horizontally, instead of vertically, Moffitt explained that all tests indicated the block had to be set with the core holes vertically. Tests done on the block indicated that slumping would occur if the block were fired horizontally.

Dean Tinker concurred with the rest of the panel by stating that new and better units for firing the block are currently in the design stage and will be available very soon. At present, there are some tunnel kilns now firing clay units on a 16-hour schedule and there is no reason, Tinker stated, why clay block cannot be fired as fast or faster.

Dudley P. Frame then stated his company's experience with clay block. His company has had considerable experience also in clay block and various and different dryers have been constructed. It is generally felt that drying should be done on a pallet in a rack type dryer.

Glazing Clay Block . . .

(Continued from page 77)

with an unglazed block, then go into a glazed unit using the 2-fire process and as refinements are made in the manufacturing process for glazing the clay block.

Joshua Lowenfish explained that many times low cost housing is not as low cost as the name might imply. To develop a truly low cost housing required the aid of Alfred University and the ultimate development of this clay unit. Lowenfish stated the advantages of design with use of a clay bonded unit and expressed his desire to be able to obtain many more sizes and colors.

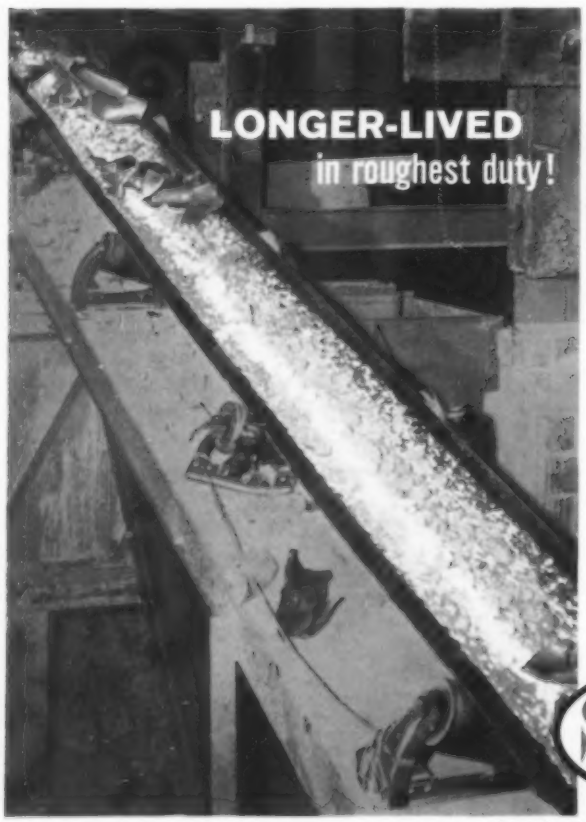
Types of Aggregate . . .

(Continued from page 76)

unit weight, increase thermal insulation, improve accoustical characteristics, provide desirable surface textures, provide nailable units.

Robinson pointed out that the particle size distribution of aggregate is an important variable of manufacture. The best size distribution should be determined for each manufacturer. The aggregate should be thermally stable and nonshrinking up through the maturing temperature of the block. The bond clay and the aggregate should be compatable. The bond clay should harden and mature at temperatures lower than those required to cause shrinkage in the aggregate. The bond clay should also strongly adhere to the aggregate and yet be free from damaging reactions with the aggre-

(Continued on page 126)



A typical Scandura application—inclined conveyor handling raw clay and scrap.

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Scandura PVC — the *original* solid-woven polyvinyl coated belting — won its spurs in the heavy ceramics industry, with many installations in Ohio's brick, sewer pipe, ceramic tile and drain tile plants. Today, Scandura PVC Belting is first choice everywhere for drag conveyors, off-bearing conveyors, bucket elevator belts and transmission belts — offering unmatched strength and endurance. Write for the Scandura facts; also for full information on our Fentonia and Scandinavia solid-woven bituminous treated brands for inclined scrap return conveyors and measuring belts.

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CLAY PIPE JOINTS *with*
RCI EPOXY *and* POLYESTER

RCI epoxy and polyester resins especially formulated for clay pipe joints offer the pipe manufacturer materials of superior adhesion, toughness, resilience, compression set resistance, and resistance to acids and alkalis.

In addition, the controlled curing characteristics of these resins in combination with RCI hardeners and catalysts assure ease of handling and maximum processing economy.

Why not let RCI's long experience with plastic resins assist you in obtaining optimum production efficiency in casting these improved clay pipe joints?

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RCI BUILDING
White Plains, New York

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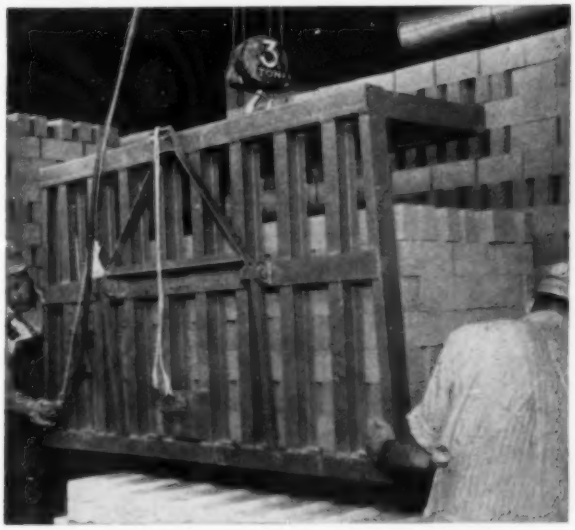
Make Brick Handling Easy...

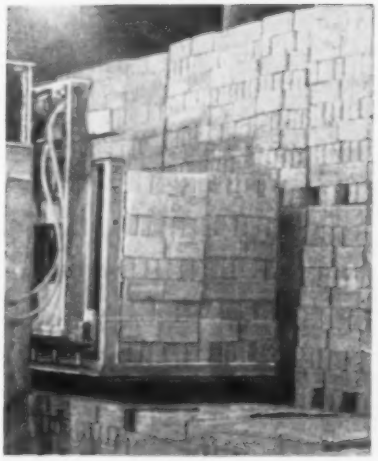


PRIESTER Brick Forks

- Save Time
- Save Money
- Save Labor

Also Priester truck cranes for unloading from delivery trucks. Write for bulletin.

Brick in units of any size are handled by Priester Brick Forks. Automatic operation simplifies and speeds brick handling setting and drawing kilns, loading and unloading trucks and box cars.



Forks with flap grippers for cored and solid brick. Give service . . . take the hard work out of brick handling. Write today for more information.

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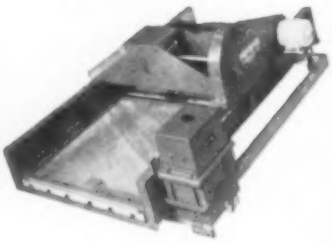
Want "All-Out" Screening Efficiency!



If you are interested in optimum screen performance and profits, the finger of field experience points unmistakably to the Leahy® screen.

Here is a time-proved piece of equipment that shows the way, not only in screening excellence, but in trouble free operation and economy as well.

Examine the many exclusive features such as Differential Vibration, power-saving action that vibrates the jacket only, integrated FlexElex® jacket heating, and the outboard transformer that banishes bothersome flexible connectors with its direct-to-the jacket bus bars.

THE Leahy NO-BLIND VIBRATING SCREEN

— offers —
INTEGRATED HEAT SCREENING

For complete information, send for Bulletin 16-EH.

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The Original Deister Co., Est., 1906
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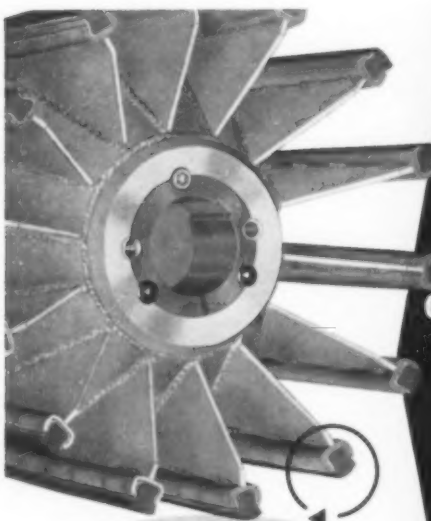

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• LESS WEAR OF CONVEYOR BELTS
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WRITE FOR FREE SAMPLE

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VAN gorp MFG., INC. Dept. BCR Pella, Iowa

Circle Service No. 92

gate. The drying and firing shrinkage and the cooling contraction of the bond clay should be compatable with the aggregate.

Of all the aggregates mentioned above, it was decided by the panel members and the audience that perhaps the two most desirable aggregates would be expanded clay or shale and the SCPRF aggregate. Expanded vermiculite has the lowest weight per unit volume of all the aggregate materials, but it is also characterized by being highly absorbent and very soft. These attributes are desirable for one possible forming operation but objectionable for other forming processes.

Robert Taylor discussed the SCPRF aggregate at length. Samples of the clay block unit which were made with this aggregate were shown. Taylor mentioned that the block met ASTM specifications as far as strength and absorption go. The other types of aggregate were also discussed by Ron Hardy and Charles Goodman. They discussed the expanded clay and shale aggregates made by the sinter belt method and the rotary kiln method. Questions were asked as to the proper sizing and gradation of the aggregate to make a suitable block, and it was generally agreed that the best way for any potential manufacturer to start making a clay bonded block was to start off with a typical concrete block mix.

Henry Burns related his experiences with his particular aggregate. Burns makes the aggregate himself from the same type of binder clay and thus finds the two clays compatable. In general, it was decided that it would not be the most profitable venture to manufacture one's own aggregate, since the production required to attain a profitable rate of production would be in excess of that required for one's own block making plant.

Basic Stock Now Listed On N.Y. Stock Exchange

The common stock of Basic, Inc., Cleveland, O., has been admitted to trading on the New York Stock Exchange, under the ticker symbol, BAI. The stock was recently traded on the American Exchange.

GRAVELY KILN CAR TRACTOR

PUSHES COSTS DOWN!

MOVE LOADED CARS WEIGHING OVER 100,000 LBS!

The 6.6 hp Gravely "Kiln Car" tractor is specially adapted to move your cars in and out of tunnel kilns, spot to off-bearing belts or storage areas.

Gravely engineered the new tractor exclusively for brick and ceramic plant use, after serving the industry for years. The tractor features a customized Front Hitch to fit *your* cars!

Gravely Users Report: (Gravely) is "small enough to get around among the crowded tracks, yet powerful enough for the job of moving the cars." R.R., Jackson, Miss. "We can recommend it (Gravely) very highly to other manufacturers in the industry." A.L., Gorham, Maine. *Investigate For Yourself!*

30 GROUNDS MAINTENANCE TOOLS!

Extra Dividend! The same Gravely Tractor powers 30 year-round *ground maintenance* tools.

FREE LITERATURE—DEMONSTRATION!

Send for special "Kiln Car Circular" and "How To Cut Costs" catalog. See on-the-job pictures and detailed information on Gravely Equipment. Ask about a Free Demonstration!

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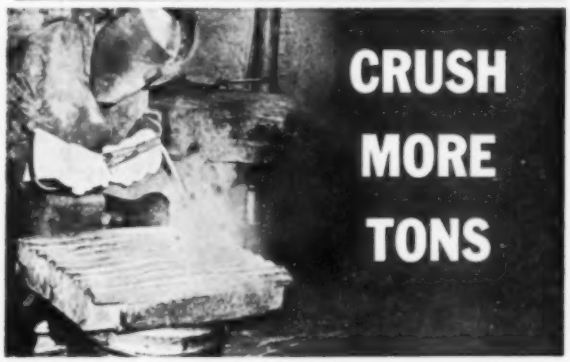

Cut Crushing Costs With Colmonoy Hard Surfacing

Colmonoy alloys are used to cut costs both here and abroad. A British foundry brick producer rebuilds his crusher jaws with Walmang No. 3, then hard surfaces them with Colmonoy No. 1. He reports service life of 630 hours now, versus 160 hours formerly—and this easy-to-use hard surfacing can be applied repeatedly.

There's a wide variety of Colmonoy Alloys. They resist all types of wear, cutting costs. Tell us about your wear problem. Send for the Colmonoy Hard-Surfacing Manual today.

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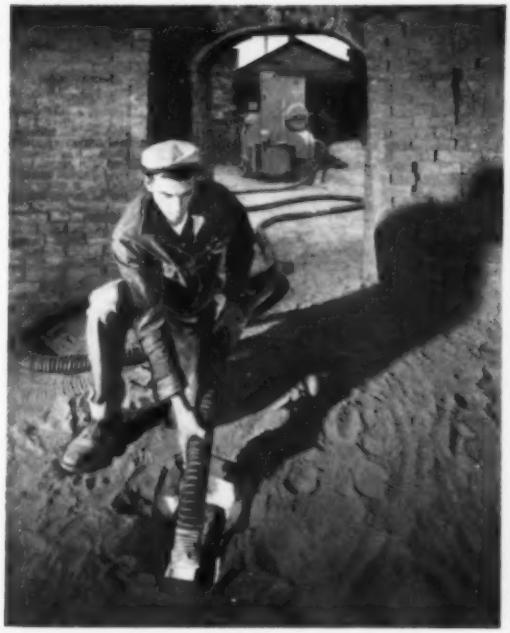
Hoffman saves 80% ON LABOR COSTS INCREASES BRICK PLANT EFFICIENCY 20%



portable HOFFCO-VEYOR provides fast, safe conveying and cleaning

THE PROBLEM

In this plant, brick chips and sand falling into flue openings of periodic kilns regularly cut off the draft necessary to maintain 2000° temperatures. To maintain production schedules, kilns had to be cleaned at temperatures of over 100°F. Despite the use of special gloves, fingers and hands were often bruised and burned. Rejects and labor costs were extremely high.

THE SOLUTION

The answer to the problem was the HOFFCO-VEYOR 100. With this 10 HP portable, a kiln can be thoroughly cleaned in an hour—be free for maximum production in one-eighth the time formerly required. Suction cleaning of chips from clogged flues and jammed walls is accomplished by one operator working from a safe vantage point. The painstaking job of uncapping and recapping pits, mass brick shifting and tedious hand removal of chips are all eliminated. The HOFFCO-VEYOR does the job quickly and efficiently.

For detailed information on ways and means the HOFFCO-VEYOR can cut labor costs—increase efficiency in your brick plant, write for case history and specifications.

AIR APPLIANCE DIVISION

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WANTED—Ceramic Engineer or experienced man in clay products manufacturing to understudy present management with the aim at assuming a superintendent position over several factories. Write Box 4-BEG care of Brick & Clay Record.

CERAMIC ENGINEER—Large modern sewer pipeplant located in Midwest. Man who could eventually take over plant operation. Give experience references, and salary desired. Write Box 3-BCB care of Brick and Clay Record.

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WANTED High temperature kiln and building of approximately 40 to 50,000 sq. ft. Will consider alternatives. Write Box 3-BCC care of Brick & Clay Record.

WANTED—Face brick millrom mechanic having exceptional knowledge of dies. Immediate advancement is possible. Replies will be treated confidentially. Address Box 4-BEC care of Brick & Clay Record.

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FOR SALE: Crawler Shale Planer, 6' & 9' Dry, 8' Wet Pans, 500 Dryer Cars 24" & 25" ga. Chambers Royal, Steele 30B, 40B, Intl "Porcelain", FRH6 deairing & Freese GH, Steele #1, #2, Amer 404A & Ray non-deaired Brick Machines. Six Komarek-Greaves Briquetting and Boyd 4 mold, Gates 2 mold Dry Presses. Boyd Press complete installation. FRH2B, Steele #18 Cutters. Ladd Cronin Circular 70' dia and other Tunnel Kilns. 4x30, 4x40, 8x125 Rotary Kilns. 4x6, 5x9, 5x21 Ball Mills Dixie 5060 Hammermill.
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FOR SALE—Type 6 Fate-Root-Heath Brick Machine with extra strength steel driving gears and pinions. Now in operation making 86,000 brick in 8 hours. Will be available in 30 days. Will be surplus because of change-over to new brick making production line. Approximately 200 Chase Dryer Cars, 100 Single deck, 100 Double deck. Priced to Sell. Southside Brick Works, Inc., P.O. Box 927, Richmond, Virginia.

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DRYERS—24" x 24"—3' x 24'—5' x 40'—6' x 20'—7' x 58' (50 HP gearmotor)

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1—8' x 60' rotary kiln, ⅓" welded shell.
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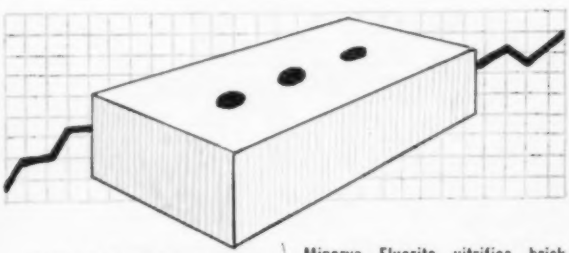

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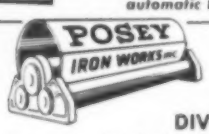

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Forming Clay Block . . .

(*Continued from page 76*)

block. Karl Nensewitz also discussed his company's experience in the manufacture of block, both concreae and clay-bonded units.

After the discussion of the concrete block machines, L. Arthur Lassman, discussed the hydraulic press which his company makes. Robert Poole also discussed the Boyd press, which has found wide use, not only in the refractories industry but in some applications for making clay block.

The pressures exerted on a block are considerably less in a concrete block machine than they are with a hydraulic press. The entire pressure over the entire mold in a concrete block may vary from 1600 lbs. up to 3000 lbs., while pressures in a hydraulic press may go up to 50,000 psi. However, one big advantage of the concrete block machine is the vibrating characteristic of that particular machine. When asked if vibration in the machine might cause some particle segregation in the aggregate mix both Small and Nensewitz stated that test results indicated that none occured.

It was generally agreed that both the concrete block machine and the hydraulic press are quiet adaptable for making this particular unit. Audience reaction to this was also favorable and several manufacturers who have experimented with the forming of a block indicated that they have been successful using one of the two mentioned machines.

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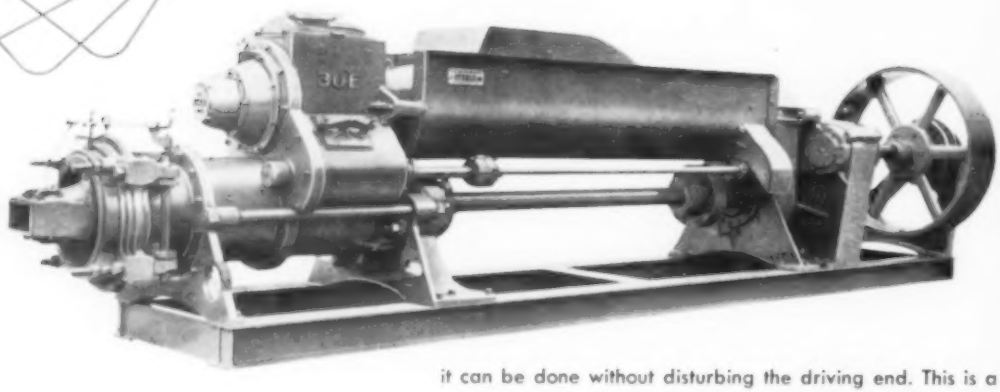

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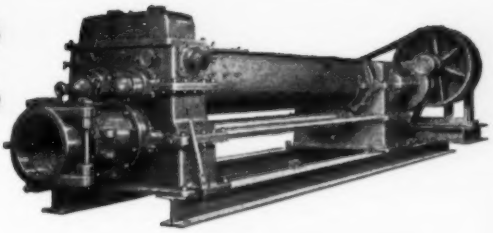

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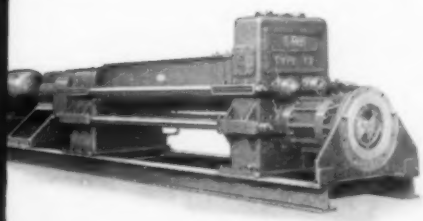

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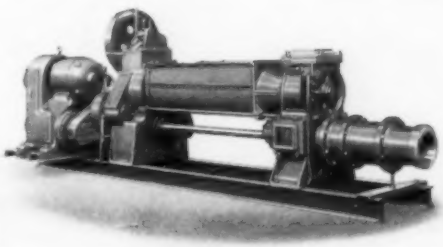

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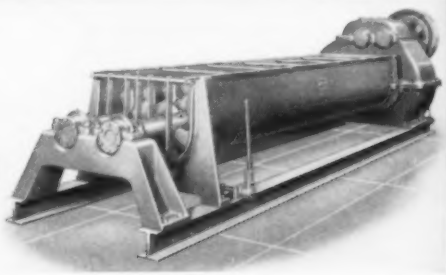

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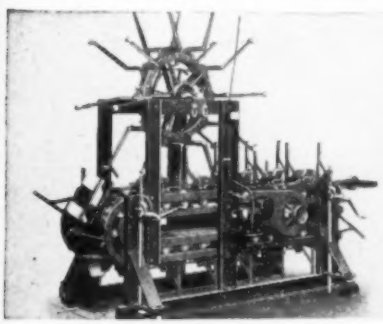

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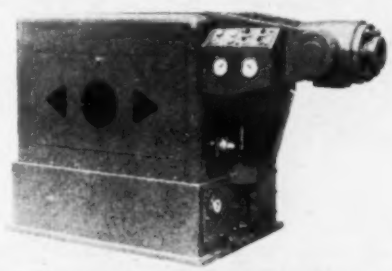

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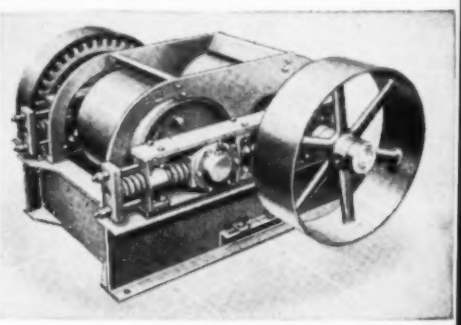

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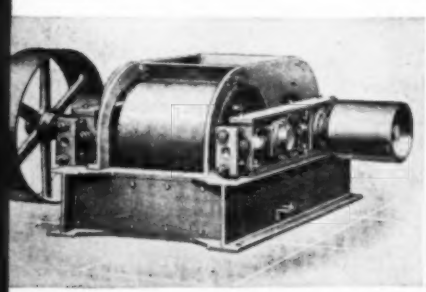

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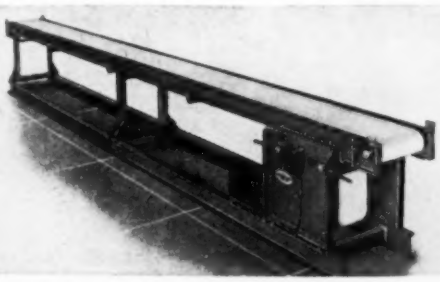

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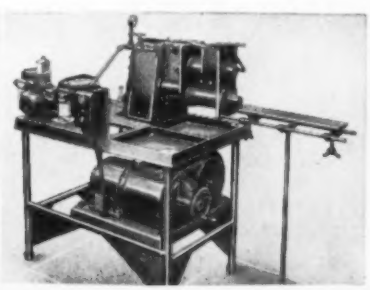

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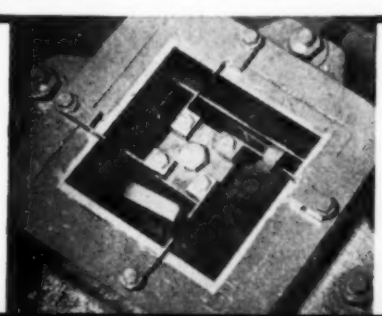

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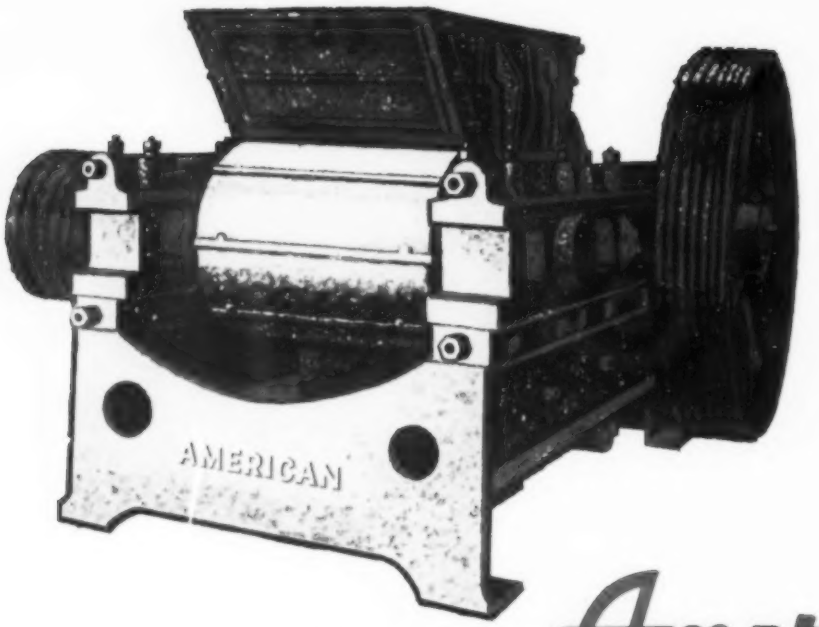

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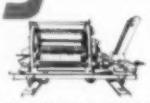
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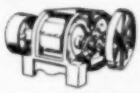
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PUG MILLS

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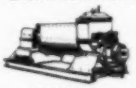
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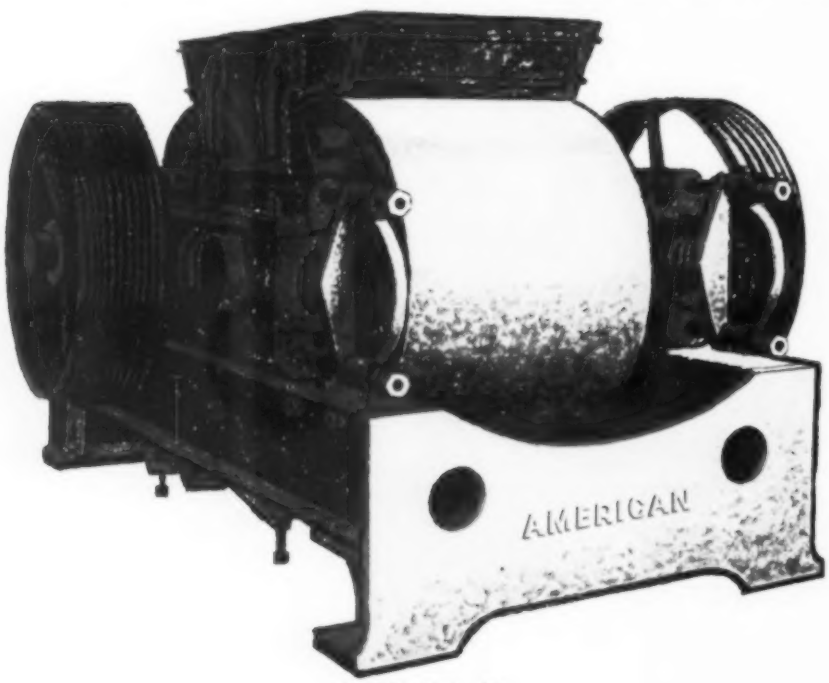
DIVISION OF

HUBER-WARCO COMPANY - Marion, Ohio, U.S.A.



Circle Service No. 104